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FOREST SURVEY RELEASE NO. 19 APRIL 1, 1945

APPROXIMATE FOREST AREA AND TIMBER VOLUME BY COUNTY
IN THE
CAROLINAS AND VIRGINIA

by

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A FOREST SURVEY PROGRESS REPORT

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U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

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PREFACE

Through the McSweeny-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act, and each of the 11 Regional Forest Experiment Stations is responsible for the work in its territory. In the Middle Atlantic States the Forest Survey is an activity of the Appalachian Forest Experiment Station, Asheville, North Carolina.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth. Determination of the current rate of timber growth.

3. Drain. Determination of the amount of industrial and domestic wood used, and the total loss resulting from fire, insects, disease, suppression, and other causes.

4. Requirements. Determination of the current and probable future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

This progress report presents information on one part of the inventory phase of the Forest Survey, and deals specifically with the forest area and timber volume by county in the Carolinas and Virginia.

CONTENTS

Page

INTRODUCTION- 1

LIMITATIONS ON USE OF COUNTY DATA - - - - - - - - - - - - - - - 1

EXPLANATION OF TABLES - 2

Tables of Area- 2

Tables of Volume- 2

TABLES

South Carolina

1. Forest and nonforest area by county, 1936 - - - - - - 3

2. Net board-foot volume by county, 1936 - - - - - - - - 4

3. Volume in cords by county, 1936 - - - - - - - - - - - 5

North Carolina

4. Forest and nonforest area by county, 1938 - - - - - - 6

5. Net board-foot volume by county, 1938 - - - - - - - - 8

6. Volume in cords by county, 1938 - - - - - - - - - - - 10

Virginia

7. Forest and nonforest area by county, 1940 - - - - - - 12

8. Net board-foot volume by county, 1940 - - - - - - - - 14

9. Volume in cords by county, 1940 - - - - - - - - - - - 16

APPROXIMATE FOREST AREA AND TIMBER VOLUME BY COUNTY

IN THE

CAROLINAS AND VIRGINIA

This report, giving the approximate forest area and timber volume in each county of the Carolinas and Virginia, is based upon field surveys made as a part of the inventory phase of the Forest Survey at the Appalachian Forest Experiment Station. In the East the nation-wide Forest Survey did not plan to release information for areas smaller than survey units (four to ten million acres), but the demand for forest statistics by counties has shown a marked increase as planning for post-war development becomes more intense with the gradual approach of victory. To meet this demand the original Forest Survey statistics for survey units within states have been recomputed to provide estimates of forest area and timber volumes by counties, and are presented in this report as a series of three statistical tables for each state. The figures are as of the date of the original survey, and no attempt has been made to correct them for recent changes in forest area or annual timber growth and drain. In South Carolina the data are for 1936, in North Carolina for 1938, and in Virginia for 1940.

LIMITATIONS ON USE OF COUNTY DATA

The sampling procedure used on the inventory phase of the Forest Survey ($\frac{1}{4}$-acre plots at 10-chain intervals on lines 10 miles apart) was designed to give reliable estimates of forest area and timber volumes for survey units totaling several million acres in size. This extensive sample does not provide an adequate basis for accurate determinations of forest area and volume for individual counties, as some values will be too high and others too low. Therefore, the data given in the following tables should not be considered correct for individual counties, although tests have shown that the forest area estimates are within 10 percent of areas planimetered from aerial photographs in a high proportion of the counties checked.

The intended use of these tables is to provide a flexible method of obtaining approximate forest acreages and timber volumes in areas that differ, in size and location, from the established Forest Survey units. Such areas might include the wood procurement territories of pulp companies, the zone of influence of towns and cities, the freight territory along railroads, and land tributary to proposed new forest industries. For reliable estimates the combined acreage of the counties in the selected area should be not less than two million acres.

EXPLANATION OF TABLES

Tables of Area

South Carolina: County areas are according to the Bureau of the Census, 1935. According to area revisions published by the Bureau of the Census in 1942 the State contains 19,580,160 acres, an increase of 63,360 above the 1935 acreage.

The area of the coastal islands of Beaufort County is included in table 1. These islands, which contain about 91,200 acres with 27,400 forested, were not included in previously published Forest Survey reports.

North Carolina: County areas are according to the Bureau of the Census, 1935. According to area revisions published by the Bureau of the Census in 1942 the State contains 31,450,800 acres, an increase of 257,200 above the 1935 acreage.

The public-reserved land listed is only the forested portion of the Great Smoky Mountains National Park.

Virginia: County areas are according to the Bureau of the Census, 1940.

The public-reserved land consists of national parks, state parks, national monuments, and similar public areas on which commercial timber cutting is prohibited.

All States: Noncommercial forest land lacks the qualities essential for the growth of merchantable saw timber or pulpwood.

Commercial forest land includes both private and public lands, excluding public-reserved lands.

Tables of Volume

All States: Board-foot volumes include the net volume of all merchantable softwoods and cypress 9.0 inches d.b.h. and larger, and all merchantable hardwoods 13.0 inches d.b.h. and larger.

Volumes in cords include the net volume in all sound trees 5.0 inches d.b.h. and larger, including the saw-timber volume shown in board feet.

Cypress is included with hardwoods.

Chestnut is not included with the volume estimates.

The volume per average acre is the average stand on the total acreage of commercial forest land in the county.

Table 1. - Forest and nonforest area by county in South Carolina, 1936.

County	Total[1/] land area	Nonforest area	Forest area		
			Non-commercial	Commercial	Total
	Acres	Acres	Acres	Acres	Acres
Abbeville	326,400	172,600	-	153,800	153,800
Aiken	704,000	277,300	-	426,700	426,700
Allendale	278,400	113,300	-	165,100	165,100
Anderson	485,100	341,100	2,400	141,600	144,000
Bamberg	242,600	134,200	-	108,400	108,400
Barnwell	334,100	195,100	-	139,000	139,000
Beaufort	449,300	302,100	-	147,200	147,200
Berkeley	769,900	140,100	-	629,800	629,800
Calhoun	250,200	123,100	-	127,100	127,100
Charleston	590,700	335,800	3,200	251,700	254,900
Cherokee	240,000	167,000	-	73,000	73,000
Chester	378,900	215,300	-	163,600	163,600
Chesterfield	535,700	236,700	-	299,000	299,000
Clarendon	409,600	171,500	-	238,100	238,100
Colleton	718,100	212,600	-	505,500	505,500
Darlington	387,200	209,400	-	177,800	177,800
Dillon	301,400	134,600	-	166,800	166,800
Dorchester	392,300	87,700	-	304,600	304,600
Edgefield	331,500	139,200	-	192,300	192,300
Fairfield	451,800	157,500	-	294,300	294,300
Florence	476,200	238,700	-	237,500	237,500
Georgetown	529,900	133,400	-	396,500	396,500
Greenville	487,000	248,700	2,400	235,900	238,300
Greenwood	302,700	159,100	-	143,600	143,600
Hampton	328,300	121,800	-	206,500	206,500
Horry	741,100	182,700	4,800	553,600	558,400
Jasper	381,400	125,400	-	256,000	256,000
Kershaw	429,400	234,100	-	195,300	195,300
Lancaster	329,600	139,200	-	190,400	190,400
Laurens	441,600	239,700	-	201,900	201,900
Lee	261,800	160,600	-	101,200	101,200
Lexington	475,500	191,100	-	284,400	284,400
Marion	338,600	110,000	-	228,600	228,600
Marlboro	332,200	177,900	-	154,300	154,300
McCormick	246,400	97,500	-	148,900	148,900
Newberry	398,700	199,400	-	199,300	199,300
Oconee	416,000	150,500	4,700	260,800	265,500
Orangeburg	723,900	374,000	-	349,900	349,900
Pickens	338,600	142,600	800	195,200	196,000
Richland	489,600	188,600	800	300,200	301,000
Saluda	278,400	129,400	-	149,000	149,000
Spartanburg	489,600	342,800	3,200	143,600	146,800
Sumter	408,300	211,800	-	196,500	196,500
Union	314,900	157,600	1,600	155,700	157,300
Williamsburg	564,500	192,100	800	371,600	372,400
York	415,400	270,300	800	144,300	145,100
All counties	19,516,800	8,785,200	25,500	10,706,100	10,731,600

[1/] According to the Bureau of the Census, 1935.

Table 2. - Net board-foot volume[1] by county in South Carolina, 1936.
(International 1/4-inch rule)

County	Total volume			Volume per average acre		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Bd. ft.	Bd. ft.	Bd. ft.
Abbeville	114.9	100.2	215.1	747	652	1,399
Aiken	515.9	150.8	666.7	1,209	353	1,562
Allendale	197.1	143.1	340.2	1,194	867	2,061
Anderson	126.7	91.6	218.3	895	647	1,542
Bamberg	103.8	131.0	234.8	958	1,208	2,166
Barnwell	209.9	138.0	347.9	1,510	993	2,503
Beaufort[2]	393.8	139.1	532.9	3,287	1,161	4,448
Berkeley	1,449.4	757.9	2,207.3	2,301	1,204	3,505
Calhoun	231.0	181.4	412.4	1,818	1,427	3,245
Charleston	722.4	393.4	1,115.8	2,870	1,563	4,433
Cherokee	76.8	32.1	108.9	1,052	440	1,492
Chester	156.8	73.1	229.9	958	447	1,405
Chesterfield	324.8	178.4	503.2	1,086	597	1,683
Clarendon	371.6	319.6	691.2	1,561	1,342	2,903
Colleton	1,349.5	780.4	2,129.9	2,669	1,544	4,213
Darlington	378.7	198.9	577.6	2,130	1,119	3,249
Dillon	220.5	361.4	581.9	1,322	2,167	3,489
Dorchester	986.9	783.2	1,770.1	3,240	2,571	5,811
Edgefield	293.1	54.1	347.2	1,524	282	1,806
Fairfield	439.8	64.4	504.2	1,494	219	1,713
Florence	446.5	318.6	765.1	1,880	1,341	3,221
Georgetown	1,129.7	451.4	1,581.1	2,849	1,139	3,988
Greenville	270.0	170.7	440.7	1,144	724	1,868
Greenwood	208.8	108.8	317.6	1,454	758	2,212
Hampton	279.8	252.2	532.0	1,355	1,221	2,576
Horry	1,090.6	538.8	1,629.4	1,970	973	2,943
Jasper	277.6	427.6	705.2	1,085	1,670	2,755
Kershaw	328.0	78.4	406.4	1,680	401	2,081
Lancaster	255.4	77.4	332.8	1,341	407	1,748
Laurens	249.3	204.7	454.0	1,235	1,014	2,249
Lee	167.7	132.7	300.4	1,657	1,311	2,968
Lexington	491.0	71.8	562.8	1,726	253	1,979
Marion	210.1	359.9	570.0	919	1,574	2,493
Marlboro	207.5	345.1	552.6	1,345	2,236	3,581
McCormick	204.7	52.5	257.2	1,375	352	1,727
Newberry	316.1	73.8	389.9	1,586	370	1,956
Oconee	423.0	164.6	587.6	1,622	631	2,253
Orangeburg	727.0	447.6	1,174.6	2,078	1,279	3,357
Pickens	261.4	204.1	465.5	1,339	1,046	2,385
Richland	481.6	380.8	862.4	1,604	1,269	2,873
Saluda	234.9	42.0	276.9	1,576	282	1,858
Spartanburg	263.9	76.5	340.4	1,838	532	2,370
Sumter	259.6	558.8	818.4	1,321	2,844	4,165
Union	199.4	59.6	259.0	1,280	383	1,663
Williamsburg	735.4	924.2	1,659.6	1,979	2,487	4,466
York	141.8	77.3	219.1	982	536	1,518
All counties	18,524.2	11,672.0	30,196.2	1,735	1,093	2,828

[1] Volume on commercial forest land.

[2] The timber on the coastal islands of Beaufort County is not included.

Table 3. - Net volume[1] in cords by county in South Carolina, 1936.
(All sound trees 5.0 inches d.b.h., including saw timber)

County	Total Volume			Volume per average acre		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	M cords	M cords	M cords	Cords	Cords	Cords
Abbeville	694	559	1,253	4.5	3.6	8.1
Aiken	1,952	954	2,906	4.6	2.2	6.8
Allendale	654	849	1,503	3.9	5.2	9.1
Anderson	627	458	1,085	4.4	3.3	7.7
Bamberg	376	846	1,222	3.5	7.8	11.3
Barnwell	641	818	1,459	4.6	5.9	10.5
Beaufort[2]	1,271	684	1,955	10.6	5.7	16.3
Berkeley	4,419	3,494	7,913	7.0	5.6	12.6
Calhoun	785	976	1,761	6.2	7.7	13.9
Charleston	2,043	1,994	4,037	8.1	7.9	16.0
Cherokee	384	243	627	5.3	3.3	8.6
Chester	864	401	1,265	5.3	2.4	7.7
Chesterfield	1,349	917	2,266	4.5	3.1	7.6
Clarendon	1,235	1,456	2,691	5.2	6.1	11.3
Colleton	4,455	4,137	8,592	8.8	8.2	17.0
Darlington	1,237	972	2,209	6.9	5.5	12.4
Dillon	679	1,585	2,264	4.1	9.5	13.6
Dorchester	3,[illegible]77	3,505	6,582	10.1	11.5	21.6
Edgefield	1,372	389	1,761	7.2	2.0	9.2
Fairfield	2,197	518	2,715	7.5	1.7	9.2
Florence	1,412	1,384	2,796	6.0	5.8	11.8
Georgetown	3,612	2,295	5,907	9.1	5.8	14.9
Greenville	1,264	997	2,261	5.4	4.2	9.6
Greenwood	940	568	1,508	6.5	4.0	10.5
Hampton	1,008	1,275	2,283	4.9	6.2	11.1
Horry	3,625	3,025	6,650	6.5	5.5	12.0
Jasper	1,093	1,884	2,977	4.3	7.3	11.6
Kershaw	1,209	568	1,777	6.2	2.9	9.1
Lancaster	1,140	561	1,701	6.0	2.9	8.9
Laurens	1,120	949	2,069	5.5	4.7	10.2
Lee	524	621	1,145	5.2	6.1	11.3
Lexington	1,999	620	2,619	7.0	2.2	9.2
Marion	738	1,532	2,270	3.2	6.7	9.9
Marlboro	736	1,371	2,107	4.8	8.9	13.7
McCormick	989	369	1,358	6.6	2.5	9.1
Newberry	1,466	414	1,880	7.3	2.1	9.4
Oconee	1,499	1,044	2,543	5.8	4.0	9.8
Orangeburg	2,184	2,390	4,574	6.2	6.9	13.1
Pickens	1,005	1,042	2,047	5.2	5.3	10.5
Richland	1,903	1,537	3,440	6.4	5.1	11.5
Saluda	1,098	350	1,448	7.4	2.3	9.7
Spartanburg	1,154	467	1,621	8.0	3.3	11.3
Sumter	793	2,146	2,939	4.1	10.9	15.0
Union	988	386	1,374	6.3	2.5	8.8
Williamsburg	2,202	3,347	5,549	5.9	9.0	14.9
York	714	510	1,224	5.0	3.5	8.5
All counties	66,726	57,407	124,133	6.2	5.4	11.6

[1] Volume on commercial forest land.

[2] The timber on the coastal islands of Beaufort County is not included.

Table 4. - Forest and nonforest area by county in North Carolina, 1938.

County	Total land area	Nonforest area	Forest area			
			Public reserved	Noncommercial	Commercial	Total
	Acres	Acres	Acres	Acres	Acres	Acres
Alamance	31[illegible],900	173,700	-	2,500	138,700	141,200
Alexander	185,000	95,200	-	-	89,800	89,800
Alleghany	149,800	97,100	-	-	52,700	52,700
Anson	355,800	163,800	-	-	192,000	192,000
Ashe	273,300	177,600	-	-	95,700	95,700
Avery	152,300	52,900	-	-	99,400	99,400
Beaufort	537,600	167,300	-	-	370,300	370,300
Bertie	449,900	147,000	-	-	302,900	302,900
Bladen	624,600	107,800	-	2,400	514,400	516,800
Brunswick	505,600	78,400	-	3,300	423,900	427,200
Buncombe	436,500	147,800	-	1,600	287,100	288,700
Burke	341,800	88,200	-	800	252,800	253,600
Cabarrus	249,600	156,200	-	-	93,400	93,400
Caldwell	301,400	82,400	-	-	219,000	219,000
Camden	140,800	55,700	-	-	85,100	85,100
Carteret	366,700	93,700	-	-	273,000	273,000
Caswell	257,300	148,300	-	-	109,000	109,000
Catawba	261,100	154,100	-	-	107,000	107,000
Chatham	445,400	170,800	-	-	274,600	274,600
Cherokee	290,600	56,600	-	800	233,200	234,000
Chowan	105,600	62,300	-	-	43,300	43,300
Clay	140,800	28,700	-	-	112,100	112,100
Cleveland	317,400	211,600	-	-	105,800	105,800
Columbus	597,200	128,400	-	-	468,800	468,800
Craven	422,400	94,300	-	-	328,100	328,100
Cumberland	428,800	144,400	-	4,100	280,300	284,400
Currituck	186,900	102,100	-	-	84,800	84,800
Dare	241,300	75,000	-	-	166,300	166,300
Davidson	364,200	195,800	-	-	168,400	168,400
Davie	165,100	112,700	-	-	52,400	52,400
Duplin	505,600	171,400	-	800	333,400	334,200
Durham	199,700	75,600	-	-	124,100	124,100
Edgecombe	325,800	189,600	-	-	136,200	136,200
Forsyth	248,300	158,900	-	-	89,400	89,400
Franklin	299,500	159,500	-	-	140,000	140,000
Gaston	232,300	159,300	-	-	73,000	73,000
Gates	229,800	60,700	-	-	169,100	169,100
Graham	190,700	30,100	-	800	159,800	160,600
Granville	321,900	134,500	-	-	187,400	187,400
Greene	161,300	92,600	-	-	68,700	68,700
Guilford	442,200	250,900	-	-	191,300	191,300
Halifax	432,600	234,700	-	-	197,900	197,900
Harnett	376,300	144,100	-	-	232,200	232,200
Haywood	349,400	139,900	59,100	800	149,600	209,500
Henderson	229,100	92,800	-	800	135,500	136,300
Hertford	218,200	79,200	-	-	139,000	139,000
Hoke	266,900	88,000	-	-	178,900	178,900
Hyde	394,900	99,900	-	-	295,000	295,000
Iredell	376,300	241,400	-	-	134,900	134,900
Jackson	316,200	65,400	-	7,300	243,500	250,800

Table 4. - North Carolina (cont.)

County	Total land area	Nonforest area	Forest area			
			Public reserved	Noncommercial	Commercial	Total
	Acres	Acres	Acres	Acres	Acres	Acres
Johnston	516,500	280,000	-	-	236,500	236,500
Jones	266,900	66,400	-	-	200,500	200,500
Lee	167,000	62,700	-	-	104,300	104,300
Lenoir	249,600	120,900	-	-	128,700	128,700
Lincoln	191,400	127,600	-	-	63,800	63,800
Macon	328,300	62,800	-	17,200	248,300	264,500
Madison	279,000	139,900	-	-	139,100	139,100
Martin	280,300	106,200	-	-	174,100	174,100
McDowell	256,000	50,400	-	3,300	202,300	205,600
Mecklenburg	382,100	216,400	-	-	165,700	165,700
Mitchell	136,300	57,600	-	1,600	77,100	78,700
Montgomery	318,700	93,000	-	-	225,700	225,700
Moore	409,000	103,600	-	-	305,400	305,400
Nash	375,000	217,800	-	-	157,200	157,200
New Hanover	138,200	36,700	-	-	101,500	101,500
Northampton	322,600	160,000	-	-	162,600	162,600
Onslow	475,500	108,900	-	3,200	363,400	366,600
Orange	249,[illegible]00	100,200	-	-	149,400	149,400
Pamlico	224,000	74,100	-	-	149,900	149,900
Pasquotank	142,700	77,900	-	-	64,800	64,800
Pender	521,600	120,600	-		401,000	401,000
Perquimans	161,300	68,200	-	-	93,100	93,100
Person	250,200	110,100	-	-	140,100	140,100
Pitt	401,300	215,700	-	-	185,600	185,600
Polk	160,600	68,700	-	-	91,900	91,900
Randolph	513,900	222,200	-		291,700	291,700
Richmond	333,400	105,700	-		227,700	227,700
Robeson	633,600	290,000	-		343,600	343,600
Rockingham	370,600	202,200	-		168,400	168,400
Rowan	313,000	231,000	-	-	82,000	82,000
Rutherford	348,200	173,400	-	1,600	173,200	174,800
Sampson	567,000	228,300	-	-	338,700	338,700
Scotland	223,400	99,100	-	-	124,300	124,300
Stanly	266,200	140,500	-	-	125,700	125,700
Stokes	307,200	155,900	-	-	151,300	151,300
Surry	332,800	159,500	-	-	173,300	173,300
Swain	353,900	48,300	168,100	1,600	135,900	305,600
Transylvania	242,600	35,600	-	5,700	201,300	207,000
Tyrrell	249,600	28,000	-	-	221,600	221,600
Union	361,600	250,100	-	-	111,500	111,500
Vance	178,600	107,500	-	-	71,100	71,100
Wake	527,400	239,000	-	-	288,400	288,400
Warren	272,000	123,500	-	-	148,500	148,500
Washington	209,300	56,800	-	-	152,500	152,500
Watauga	193,900	98,900	-	4,200	90,800	95,000
Wayne	365,500	197,400	-	-	168,100	168,100
Wilkes	470,400	160,800	-	6,500	303,100	309,600
Wilson	238,700	145,600	-	-	93,100	93,100
Yadkin	199,700	124,500	-	-	75,200	75,200
Yancey	190,700	85,200	-	-	105,500	105,500
All counties	31,193,600	12,793,800	227,200	70,900	18,101,700	18,399,800

Table 5. - Net board-foot volume[1/] by county in North Carolina, 1938.
(International 1/4-inch rule)

County	Total volume			Volume per average acre		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Bd. ft.	Bd. ft.	Bd. ft.
Alamance	169.7	128.3	298.0	1,224	925	2,149
Alexander	108.9	31.9	140.8	1,213	355	1,568
Alleghany	7.8	25.9	33.7	148	491	639
Anson	281.6	79.4	361.0	1,466	414	1,880
Ashe	7.9	84.3	92.2	82	881	963
Avery	43.5	42.2	85.7	438	424	862
Beaufort	706.0	278.4	984.4	1,906	752	2,658
Bertie	1,100.8	602.1	1,702.9	3,634	1,988	5,622
Bladen	651.3	482.9	1,134.2	1,266	939	2,205
Brunswick	495.0	158.1	653.1	1,168	373	1,541
Buncombe	324.0	396.0	720.0	1,129	1,379	2,508
Burke	365.6	142.5	508.1	1,446	564	2,010
Cabarrus	145.2	58.4	203.6	1,555	625	2,180
Caldwell	253.9	146.5	400.4	1,159	669	1,828
Camden	340.5	105.5	446.0	4,001	1,240	5,241
Carteret	439.8	77.4	517.2	1,611	284	1,895
Caswell	170.9	68.6	239.5	1,568	629	2,197
Catawba	228.7	73.4	302.1	2,137	686	2,823
Chatham	355.7	200.6	556.3	1,295	731	2,026
Cherokee	117.6	145.3	262.9	504	623	1,127
Chowan	140.8	50.2	191.0	3,252	1,159	4,411
Clay	51.4	101.6	153.0	459	906	1,365
Cleveland	219.3	60.3	279.6	2,073	570	2,643
Columbus	763.2	435.9	1,199.1	1,628	930	2,558
Craven	428.5	251.8	680.3	1,306	767	2,073
Cumberland	357.9	153.5	511.4	1,277	547	1,824
Currituck	200.0	99.5	299.5	2,359	1,173	3,532
Dare	176.8	38.7	215.5	1,063	233	1,296
Davidson	251.1	109.3	360.4	1,491	649	2,140
Davie	51.8	65.0	116.8	989	1,240	2,229
Duplin	502.1	302.6	804.7	1,506	908	2,414
Durham	293.5	125.3	418.8	2,365	1,010	3,375
Edgecombe	371.3	232.7	604.0	2,726	1,709	4,435
Forsyth	145.3	72.2	217.5	1,625	808	2,433
Franklin	286.3	113.1	399.4	2,045	808	2,853
Gaston	101.6	56.9	158.5	1,392	779	2,171
Gates	774.8	340.2	1,115.0	4,582	2,012	6,594
Graham	88.6	137.8	226.4	555	862	1,417
Granville	334.8	129.7	464.5	1,787	692	2,479
Greene	212.6	132.5	345.1	3,094	1,929	5,023
Guilford	272.1	197.7	469.8	1,422	1,034	2,456
Halifax	444.8	290.5	735.3	2,248	1,468	3,716
Harnett	347.2	112.4	459.6	1,495	484	1,979
Haywood	54.9	146.5	201.4	367	979	1,346
Henderson	36.2	106.5	142.7	267	786	1,053
Hertford	524.9	301.8	826.7	3,776	2,171	5,947
Hoke	216.0	55.2	271.2	1,207	309	1,516
Hyde	318.6	85.7	404.3	1,080	291	1,371
Iredell	187.8	87.8	275.6	1,392	651	2,043
Jackson	92.1	301.5	393.6	378	1,238	1,616
Johnston	520.8	342.5	863.3	2,202	1,448	3,650

Table 5. - North Carolina (cont.)

County	Total volume			Volume per average acre		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Bd. ft.	Bd. ft.	Bd. ft.
Jones	327.2	119.4	446.6	1,632	595	2,227
Lee	205.2	32.1	237.3	1,967	308	2,275
Lenoir	265.3	126.6	391.9	2,061	984	3,045
Lincoln	141.1	43.9	185.0	2,212	688	2,900
Macon	44.4	290.9	335.3	179	1,171	1,350
Madison	65.4	179.0	244.4	470	1,287	1,757
Martin	425.6	623.0	1,048.6	2,445	3,578	6,023
McDowell	154.2	122.9	277.1	762	608	1,370
Mecklenburg	252.2	145.1	397.3	1,522	876	2,398
Mitchell	10.7	53.6	64.3	139	695	834
Montgomery	266.2	71.4	337.6	1,180	316	1,496
Moore	239.7	78.1	317.8	785	256	1,041
Nash	384.6	150.5	535.1	2,447	957	3,404
New Hanover	123.0	7.5	130.5	1,212	74	1,286
Northampton	565.6	276.8	842.4	3,479	1,702	5,181
Onslow	509.3	258.9	768.2	1,401	713	2,114
Orange	313.1	110.1	423.2	2,096	737	2,833
Pamlico	221.1	61.8	282.9	1,475	412	1,887
Pasquotank	143.1	110.0	253.1	2,208	1,698	3,906
Pender	405.3	190.5	595.8	1,011	475	1,486
Perquimans	289.6	85.4	375.0	3,111	917	4,028
Person	224.5	128.3	352.8	1,602	916	2,518
Pitt	509.7	341.6	851.3	2,746	1,841	4,587
Polk	141.2	34.0	175.2	1,536	370	1,906
Randolph	219.2	140.1	359.3	752	480	1,232
Richmond	339.9	52.8	392.7	1,493	232	1,725
Robeson	592.2	318.9	911.1	1,724	928	2,652
Rockingham	182.6	126.2	308.8	1,084	750	1,834
Rowan	139.9	81.1	221.0	1,706	989	2,695
Rutherford	267.8	89.0	356.8	1,546	514	2,060
Sampson	674.1	198.1	872.2	1,990	585	2,575
Scotland	339.5	63.2	402.7	2,731	509	3,240
Stanly	212.8	44.9	257.7	1,693	357	2,050
Stokes	171.7	105.3	277.0	1,135	696	1,831
Surry	179.9	85.7	265.6	1,038	495	1,533
Swain	22.9	58.9	81.8	169	433	602
Transylvania	39.9	175.0	214.9	198	870	1,068
Tyrrell	384.6	166.5	551.1	1,736	751	2,487
Union	133.8	48.9	182.7	1,200	439	1,639
Vance	152.3	60.3	212.6	2,142	848	2,990
Wake	679.9	227.5	907.4	2,357	789	3,146
Warren	272.6	152.3	424.9	1,836	1,025	2,861
Washington	220.6	194.3	414.9	1,447	1,274	2,721
Watauga	40.8	115.4	156.2	449	1,271	1,720
Wayne	400.3	152.2	552.5	2,381	906	3,287
Wilkes	263.7	146.2	409.9	870	482	1,352
Wilson	346.9	112.5	459.4	3,726	1,208	4,934
Yadkin	118.6	57.9	176.5	1,577	770	2,347
Yancey	1.9	104.1	106.0	18	987	1,005
All counties	27,707.2	15,083.3	42,790.5	1,531	833	2,364

1/Volume on commercial forest land.

Table 6. - Net volume[1] in cords by county in North Carolina, 1938.
(All sound trees 5.0 inches d.b.h., including saw timber)

County	Total volume			Volume per average acre		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	M cords	M cords	M cords	Cords	Cords	Cords
Alamance	762	757	1,519	5.5	5.5	11.0
Alexander	534	418	952	5.9	4.7	10.6
Alleghany	39	187	226	0.7	3.6	4.3
Anson	1,422	643	2,065	7.4	3.4	10.8
Ashe	34	522	556	0.3	5.5	5.8
Avery	139	318	457	1.4	3.2	4.6
Beaufort	2,468	1,638	4,106	6.7	4.4	11.1
Bertie	3,646	2,761	6,407	12.0	9.1	21.1
Bladen	2,406	2,421	4,827	4.7	4.7	9.4
Brunswick	1,979	955	2,934	4.7	2.2	6.9
Buncombe	1,293	1,941	3,234	4.5	6.8	11.3
Burke	1,578	995	2,573	6.3	3.9	10.2
Cabarrus	697	291	988	7.5	3.1	10.6
Caldwell	1,186	1,093	2,279	5.4	5.0	10.4
Camden	1,013	577	1,590	11.9	6.8	18.7
Carteret	1,581	455	2,036	5.8	1.7	7.5
Caswell	852	448	1,300	7.8	4.1	11.9
Catawba	1,002	384	1,386	9.4	3.6	13.0
Chatham	1,945	1,390	3,335	7.1	5.0	12.1
Cherokee	560	956	1,516	2.4	4.1	6.5
Chowan	452	325	777	10.4	7.5	17.9
Clay	168	568	736	1.5	5.1	6.6
Cleveland	989	440	1,429	9.3	4.2	13.5
Columbus	2,569	2,216	4,785	5.5	4.7	10.2
Craven	1,648	1,268	2,916	5.0	3.9	8.9
Cumberland	1,260	1,018	2,278	4.5	3.6	8.1
Currituck	713	526	1,239	8.4	6.2	14.6
Dare	696	331	1,027	4.2	2.0	6.2
Davidson	1,039	1,035	2,074	6.2	6.1	12.3
Davie	230	305	535	4.4	5.8	10.2
Duplin	1,763	1,435	3,198	5.3	4.3	9.6
Durham	1,335	656	1,991	10.7	5.3	16.0
Edgecombe	1,179	879	2,058	8.7	6.4	15.1
Forsyth	567	408	975	6.3	4.6	10.9
Franklin	1,204	659	1,863	8.6	4.7	13.3
Gaston	462	305	767	6.3	4.2	10.5
Gates	2,638	1,507	4,145	15.6	8.9	24.5
Graham	320	741	1,061	2.0	4.6	6.6
Granville	1,554	929	2,483	8.3	4.9	13.2
Greene	627	502	1,129	9.1	7.3	16.4
Guilford	1,090	1,254	2,344	5.7	6.6	12.3
Halifax	1,662	1,290	2,952	8.4	6.5	14.9
Harnett	1,294	819	2,113	5.6	3.5	9.1
Haywood	189	711	900	1.3	4.7	6.0
Henderson	175	733	908	1.3	5.4	6.7
Hertford	1,814	1,382	3,196	13.1	9.9	23.0
Hoke	833	385	1,218	4.7	2.1	6.8
Hyde	1,229	448	1,677	4.2	1.5	5.7
Iredell	940	560	1,500	7.0	4.1	11.1
Jackson	301	1,590	1,891	1.3	6.5	7.8
Johnston	1,781	1,677	3,458	7.5	7.1	14.6

Table 6. - North Carolina (cont.)

County	Total volume			Volume per average acre		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	M cords	M cords	M cords	Cords	Cords	Cords
Jones	1,226	623	1,849	6.1	3.1	9.2
Lee	961	257	1,218	9.2	2.5	11.7
Lenoir	869	593	1,462	6.8	4.6	11.4
Lincoln	581	333	914	9.1	5.2	14.3
Macon	164	1,489	1,653	0.7	6.0	6.7
Madison	251	857	1,108	1.8	6.2	8.0
Martin	1,442	2,477	3,919	8.3	14.2	22.5
McDowell	710	937	1,647	3.5	4.6	8.1
Mecklenburg	1,144	845	1,989	6.9	5.1	12.0
Mitchell	39	371	410	0.5	4.8	5.3
Montgomery	1,425	954	2,379	6.3	4.2	10.5
Moore	1,229	991	2,220	4.0	3.3	7.3
Nash	1,391	888	2,279	8.8	5.7	14.5
New Hanover	567	55	622	5.6	0.5	6.1
Northampton	2,040	1,276	3,316	12.5	7.9	20.4
Onslow	2,079	1,380	3,459	5.7	3.8	9.5
Orange	1,286	798	2,084	8.6	5.3	13.9
Pamlico	826	419	1,245	5.5	2.8	8.3
Pasquotank	466	441	907	7.2	6.8	14.0
Pender	1,550	1,085	2,635	3.9	2.7	6.6
Perquimans	944	483	1,427	10.1	5.2	15.3
Person	1,093	756	1,849	7.8	5.4	13.2
Pitt	1,728	1,283	3,011	9.3	6.9	16.2
Polk	688	254	942	7.5	2.8	10.3
Randolph	1,316	1,565	2,881	4.5	5.4	9.9
Richmond	1,372	528	1,900	6.0	2.3	8.3
Robeson	1,988	1,922	3,910	5.8	5.6	11.4
Rockingham	847	830	1,677	5.0	4.9	9.9
Rowan	571	446	1,017	7.0	5.4	12.4
Rutherford	1,102	727	1,829	6.4	4.2	10.6
Sampson	2,458	1,258	3,716	7.3	3.7	11.0
Scotland	1,044	354	1,398	8.4	2.8	11.2
Stanly	1,011	536	1,547	8.0	4.3	12.3
Stokes	793	798	1,591	5.2	5.3	10.5
Surry	945	805	1,750	5.5	4.6	10.1
Swain	116	424	540	0.9	3.1	4.0
Transylvania	145	1,164	1,309	0.7	5.8	6.5
Tyrrell	1,416	1,337	2,753	6.4	6.0	12.4
Union	692	442	1,134	6.2	4.0	10.2
Vance	578	368	946	8.1	5.2	13.3
Wake	2,761	1,464	4,225	9.6	5.1	14.7
Warren	1,208	875	2,083	8.1	5.9	14.0
Washington	762	1,200	1,962	5.0	7.9	12.9
Watauga	132	545	677	1.5	6.0	7.5
Wayne	1,294	810	2,104	7.7	4.8	12.5
Wilkes	1,299	1,332	2,631	4.3	4.4	8.7
Wilson	1,132	534	1,666	12.2	5.7	17.9
Yadkin	514	400	914	6.9	5.3	12.2
Yancey	13	694	707	0.1	6.6	6.7
All counties	108,070	87,250	195,320	6.0	4.8	10.8

1/Volume on commercial forest land.

Table 7. - Forest and nonforest area by county in Virginia, 1940.

County	Total land area	Nonforest area	Forest area			
			Public reserved	Noncommercial	Commercial	Total
	Acres	Acres	Acres	Acres	Acres	Acres
Accomac	300,800	213,900	-	-	86,900	86,900
Albemarle	476,800	196,400	13,800	-	266,600	280,400
Alleghany	289,300	42,300	2,100	25,800	219,100	247,000
Amelia	234,300	65,900	-	-	168,400	168,400
Amherst	298,900	103,300	100	-	195,500	195,600
Appomattox	219,500	69,400	600	-	149,500	150,100
Arlington 1/	-	-	-	-	-	-
Augusta	640,700	317,400	11,300	25,800	286,200	323,300
Bath	345,600	95,900	2,100	29,100	218,500	249,700
Bedford	495,400	262,600	-	-	232,800	232,800
Bland	236,200	74,800	-	800	160,600	161,400
Botetourt	351,400	113,200	-	13,700	224,500	238,200
Brunswick	370,600	123,600	-	-	247,000	247,000
Buchanan	325,100	74,100	-	-	251,000	251,000
Buckingham	368,600	84,900	-	-	283,700	283,700
Campbell	347,500	146,500	-	-	201,000	201,000
Caroline	348,200	103,200	-	-	245,000	245,000
Carroll	317,500	193,100	-	-	124,400	124,400
Charles City	117,800	30,800	-	-	87,000	87,000
Charlotte	299,500	115,400	-	-	184,100	184,100
Chesterfield	304,000	103,500	7,000	-	193,500	200,500
Clarke	111,400	88,300	-	-	23,100	23,100
Craig	215,000	42,500	-	4,000	168,500	172,500
Culpeper	249,000	140,900	-	-	108,100	108,100
Cumberland	184,300	57,400	-	-	126,900	126,900
Dickenson	214,400	54,100	-	-	160,300	160,300
Dinwiddie	328,300	94,900	100	-	233,300	233,400
Elizabeth City	36,500	17,800	-	-	18,700	18,700
Essex	160,000	74,700	-	-	85,300	85,300
Fairfax	286,700	107,100	300	-	179,300	179,600
Fauquier	422,400	275,900	-	-	146,500	146,500
Floyd	245,100	165,200	-	-	79,900	79,900
Fluvanna	180,500	48,400	-	-	132,100	132,100
Franklin	459,500	185,000	-	-	274,500	274,500
Frederick	279,000	143,400	-	6,500	129,100	135,600
Giles	227,800	107,600	-	3,300	116,900	120,200
Gloucester	144,000	57,500	-	-	86,500	86,500
Goochland	185,000	55,200	-	-	129,800	129,800
Grayson	288,600	191,200	-	800	96,600	97,400
Greene	97,900	51,800	13,900	-	32,200	46,100
Greensville	192,600	58,500	-	-	134,100	134,100
Halifax	517,100	260,600	-	-	256,500	256,500
Hanover	298,200	123,600	-	-	174,600	174,600
Henrico	167,700	66,900	-	-	100,800	100,800
Henry	252,200	98,600	-	-	153,600	153,600
Highland	266,200	91,000	-	18,600	156,600	175,200
Isle of Wight	205,400	78,400	-	-	127,000	127,000
James City	96,700	33,400	1,000	-	62,300	63,300
King and Queen	203,500	55,900	-	-	147,600	147,600
King George	113,900	62,200	-	-	51,700	51,700
King William	177,900	73,200	-	-	104,700	104,700

Table 7. - Virginia (cont.)

County	Total land area	Nonforest area	Forest area			
			Public reserved	Noncommercial	Commercial	Total
	Acres	Acres	Acres	Acres	Acres	Acres
Lancaster	90,900	33,800	-	-	57,100	57,100
Lee	277,800	153,200	-	800	123,800	124,600
Loudoun	330,900	232,900	-	-	98,000	98,000
Louisa	328,900	91,300	-	-	237,600	237,600
Lunenburg	283,500	83,100	-	-	200,400	200,400
Madison	209,300	98,100	32,600	-	78,600	111,200
Mathews	55,700	25,400	-	-	30,300	30,300
Mecklenburg	425,600	196,700	900	-	228,000	228,900
Middlesex	84,500	32,300	-	-	52,200	52,200
Montgomery	256,000	124,400	-	-	131,600	131,600
Nansemond	258,600	83,900	-	-	174,700	174,700
Nelson	299,500	102,900	-	-	196,600	196,600
New Kent	135,700	32,400	-	-	103,300	103,300
Norfolk	256,000	107,800	-	-	148,200	148,200
Northampton	144,600	90,700	-	-	53,900	53,900
Northumberland	128,000	51,400	-	-	76,600	76,600
Nottoway	197,100	64,900	-	-	132,200	132,200
Orange	226,500	97,500	300	-	128,700	129,000
Page	202,200	80,200	39,200	4,100	78,700	122,000
Patrick	300,200	113,900	4,700	-	181,600	186,300
Pittsylvania	657,900	301,600	-	-	356,300	356,300
Powhatan	171,500	31,800	-	-	139,700	139,700
Prince Edward	228,500	75,700	-	-	152,800	152,800
Prince George	186,200	65,600	1,100	-	119,500	120,600
Prince William	222,100	102,100	9,700	-	110,300	120,000
Princess Anne	170,900	105,500	3,200	-	62,200	65,400
Pulaski	213,100	102,800	-	-	110,300	110,300
Rappahannock	170,900	100,100	22,700	-	48,100	70,800
Richmond	122,900	46,700	-	-	76,200	76,200
Roanoke	193,900	74,700	-	-	119,200	119,200
Rockbridge	388,500	169,500	-	16,200	202,800	219,000
Rockingham	557,400	268,800	37,500	13,700	237,400	288,600
Russell	309,100	201,400	-	-	107,700	107,700
Scott	345,000	176,900	-	800	167,300	168,100
Shenandoah	324,500	154,000	-	12,900	157,600	170,500
Smyth	278,400	148,500	1,900	4,200	123,800	129,900
Southampton	388,500	125,200	-	-	263,300	263,300
Spotsylvania	265,600	61,000	1,600	-	203,000	204,600
Stafford	173,400	55,300	3,200	-	114,900	118,100
Surry	179,200	52,400	-	-	126,800	126,800
Sussex	317,400	75,600	-	-	241,800	241,800
Tazewell	334,100	164,700	-	1,700	167,700	169,400
Warren	140,200	75,100	12,900	800	51,400	65,100
Warwick	48,000	26,100	7,400	-	14,500	21,900
Washington	373,100	245,300	-	-	127,800	127,800
Westmoreland	151,000	66,300	1,100	-	83,600	84,700
Wise	265,000	60,300	-	-	204,700	204,700
Wythe	294,400	155,800	-	800	137,800	138,600
York	78,700	26,100	3,600	-	49,000	52,600
All counties	25,535,400	10,703,100	235,900	184,400	14,412,000	14,832,300

1/Included with Fairfax County.

Table 8. - Net board-foot volume[1] by county in Virginia, 1940.
(International 1/4-inch rule)

County	Total volume			Volume per average acre		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Bd. ft.	Bd. ft.	Bd. ft.
Accomac	466.1	48.3	514.4	5,364	556	5,920
Albemarle	86.0	278.8	364.8	323	1,045	1,368
Alleghany	42.5	77.4	119.9	194	353	547
Amelia	119.0	139.7	258.7	707	829	1,536
Amherst	72.1	174.1	246.2	369	890	1,259
Appomattox	58.4	92.8	151.2	390	621	1,011
Arlington[2]	-	-	-	-	-	-
Augusta	70.0	304.5	374.5	245	1,064	1,309
Bath	48.9	198.1	247.0	224	906	1,130
Bedford	97.9	190.0	287.9	421	816	1,237
Bland	106.4	143.4	249.8	662	893	1,555
Botetourt	65.5	153.5	219.0	292	684	976
Brunswick	373.1	137.3	510.4	1,510	556	2,066
Buchanan	25.5	355.4	380.9	102	1,416	1,518
Buckingham	137.8	129.8	267.6	486	457	943
Campbell	126.4	135.0	261.4	629	671	1,300
Caroline	282.4	198.4	480.8	1,152	810	1,962
Carroll	54.6	73.5	128.1	439	591	1,030
Charles City	108.5	83.6	192.1	1,247	961	2,208
Charlotte	94.2	146.5	240.7	511	796	1,307
Chesterfield	393.9	110.0	503.9	2,036	568	2,604
Clarke	4.5	22.1	26.6	195	957	1,152
Craig	38.8	86.2	125.0	230	512	742
Culpeper	33.4	96.4	129.8	309	892	1,201
Cumberland	64.5	58.5	123.0	508	461	969
Dickenson	35.4	231.7	267.1	221	1,445	1,666
Dinwiddie	381.8	156.3	538.1	1,636	670	2,306
Elizabeth City	39.8	10.7	50.5	2,129	572	2,701
Essex	102.9	93.8	196.7	1,206	1,100	2,306
Fairfax	70.6	197.3	267.9	394	1,100	1,494
Fauquier	26.0	120.7	146.7	177	824	1,001
Floyd	32.0	79.4	111.4	400	994	1,394
Fluvanna	64.2	46.8	111.0	486	354	840
Franklin	96.3	245.7	342.0	351	895	1,246
Frederick	21.8	37.4	59.2	169	290	459
Giles	34.9	65.8	100.7	298	563	861
Gloucester	167.7	116.0	283.7	1,939	1,341	3,280
Goochland	69.8	67.3	137.1	538	518	1,056
Grayson	35.4	66.2	101.6	367	685	1,052
Greene	5.9	37.3	43.2	183	1,159	1,342
Greensville	224.6	148.1	372.7	1,675	1,104	2,779
Halifax	263.8	195.1	458.9	1,028	761	1,789
Hanover	282.4	153.8	436.2	1,617	881	2,498
Henrico	241.1	92.5	333.6	2,392	918	3,310
Henry	126.9	85.2	212.1	826	555	1,381
Highland	99.7	190.0	289.7	637	1,213	1,850
Isle of Wight	350.2	183.5	533.7	2,757	1,445	4,202
James City	179.0	122.2	301.2	2,873	1,962	4,835
King and Queen	200.2	155.7	355.9	1,356	1,055	2,411
King George	21.6	130.6	152.2	418	2,526	2,944
King William	162.3	98.7	261.0	1,550	943	2,493

Table 8. - Virginia (cont.)

County	Total volume			Volume per average acre		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	Million bd. ft.	Million Bd. ft.	Million bd. ft.	Bd. ft.	Bd. ft.	Bd. ft.
Lancaster	62.2	25.8	88.0	1,089	452	1,541
Lee	6.8	119.6	126.4	55	966	1,021
Loudoun	32.1	172.9	205.0	328	1,764	2,092
Louisa	86.3	135.0	221.3	363	568	931
Lunenburg	156.8	163.8	320.6	783	817	1,600
Madison	41.2	78.9	120.1	524	1,004	1,528
Mathews	135.5	22.0	157.5	4,472	726	5,198
Mecklenburg	243.0	216.1	459.1	1,066	948	2,014
Middlesex	70.8	57.3	128.1	1,356	1,098	2,454
Montgomery	33.2	73.0	106.2	252	555	807
Nansemond	476.5	189.0	665.5	2,727	1,082	3,809
Nelson	22.2	193.0	215.2	113	982	1,095
New Kent	246.2	113.5	359.7	2,383	1,099	3,482
Norfolk	101.1	258.6	359.7	682	1,745	2,427
Northampton	351.1	12.8	363.9	6,514	237	6,751
Northumberland	98.4	62.8	161.2	1,284	820	2,104
Nottoway	110.1	114.4	224.5	833	865	1,698
Orange	54.8	46.0	100.8	426	357	783
Page	28.3	14.5	42.8	360	184	544
Patrick	74.4	142.6	217.0	410	785	1,195
Pittsylvania	339.5	272.3	611.8	953	764	1,717
Powhatan	101.2	92.5	193.7	725	662	1,387
Prince Edward	101.0	108.9	209.9	661	713	1,374
Prince George	105.6	76.4	182.0	884	639	1,523
Prince William	30.9	73.4	104.3	280	666	946
Princess Anne	126.5	98.5	225.0	2,033	1,584	3,617
Pulaski	37.4	65.9	103.3	339	598	937
Rappahannock	8.8	47.3	56.1	183	983	1,166
Richmond	97.9	106.2	204.1	1,284	1,394	2,678
Roanoke	47.5	29.5	77.0	398	248	646
Rockbridge	65.2	155.4	220.6	322	766	1,088
Rockingham	61.0	223.2	284.2	257	940	1,197
Russell	11.3	94.3	105.6	105	876	981
Scott	9.5	152.3	161.8	57	910	967
Shenandoah	48.7	81.3	130.0	309	516	825
Smyth	25.8	74.4	100.2	208	601	809
Southampton	686.2	469.0	1,155.2	2,606	1,781	4,387
Spotsylvania	105.4	94.8	200.2	519	467	986
Stafford	28.0	72.6	100.6	244	632	876
Surry	272.0	111.9	383.9	2,146	882	3,028
Sussex	591.3	238.9	830.2	2,445	988	3,433
Tazewell	16.1	212.9	229.0	96	1,270	1,366
Warren	7.4	19.2	26.6	144	374	518
Warwick	55.3	7.1	62.4	3,813	490	4,303
Washington	25.4	88.7	114.1	199	694	893
Westmoreland	97.5	86.4	183.9	1,166	1,034	2,200
Wise	19.4	207.0	226.4	95	1,012	1,107
Wythe	61.0	60.1	121.1	443	436	879
York	165.6	55.0	220.6	3,380	1,122	4,502
All counties	12,086.1	12,248.1	24,334.2	838	850	1,688

1/Volume on commercial forest land.

2/Included with Fairfax County.

Table 9. - Net volume[1] in cords by county in Virginia, 1940.
(All sound trees 5.0 inches d.b.h. and over, including saw timber)

County	Total volume			Volume per average acre		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	M cords	M cords	M cords	Cords	Cords	Cords
Accomac	1,583	293	1,876	18.2	3.4	21.6
Albemarle	644	1,777	2,421	2.4	6.7	9.1
Alleghany	219	729	948	1.0	3.3	4.3
Amelia	836	1,058	1,894	4.9	6.3	11.2
Amherst	432	1,100	1,532	2.2	5.6	7.8
Appomattox	500	864	1,364	3.3	5.8	9.1
Arlington[2]	-	-	-	-	-	-
Augusta	333	1,702	2,035	1.2	5.9	7.1
Bath	282	1,211	1,493	1.3	5.5	6.8
Bedford	643	1,194	1,837	2.8	5.1	7.9
Bland	329	710	1,039	2.1	4.4	6.5
Botetourt	353	965	1,318	1.6	4.3	5.9
Brunswick	2,011	1,246	3,257	8.1	5.1	13.2
Buchanan	91	1,952	2,043	0.3	7.8	8.1
Buckingham	1,029	1,653	2,682	3.7	5.8	9.5
Campbell	828	1,266	2,094	4.1	6.3	10.4
Caroline	1,508	1,741	3,249	6.2	7.1	13.3
Carroll	227	615	842	1.8	5.0	6.8
Charles City	473	681	1,154	5.5	7.8	13.3
Charlotte	772	1,190	1,962	4.2	6.5	10.7
Chesterfield	1,864	1,073	2,937	9.6	5.6	15.2
Clarke	31	167	198	1.4	7.2	8.6
Craig	206	534	740	1.2	3.2	4.4
Culpeper	246	829	1,075	2.3	7.6	9.9
Cumberland	588	584	1,172	4.6	4.6	9.2
Dickenson	110	1,084	1,194	0.7	6.7	7.4
Dinwiddie	1,744	1,383	3,127	7.5	5.9	13.4
Elizabeth City	136	143	279	7.3	7.6	14.9
Essex	468	785	1,253	5.5	9.2	14.7
Fairfax	464	1,411	1,875	2.6	7.9	10.5
Fauquier	282	962	1,244	1.9	6.6	8.5
Floyd	126	477	603	1.6	5.9	7.5
Fluvanna	566	837	1,403	4.3	6.3	10.6
Franklin	673	1,664	2,337	2.4	6.1	8.5
Frederick	162	549	711	1.3	4.2	5.5
Giles	124	444	568	1.1	3.8	4.9
Gloucester	642	670	1,312	7.4	7.8	15.2
Goochland	567	612	1,179	4.4	4.7	9.1
Grayson	130	467	597	1.4	4.8	6.2
Greene	33	211	244	1.0	6.6	7.6
Greensville	1,025	900	1,925	7.7	6.7	14.4
Halifax	1,570	1,412	2,982	6.1	5.5	11.6
Hanover	1,394	1,331	2,725	8.0	7.6	15.6
Henrico	894	660	1,554	8.9	6.5	15.4
Henry	829	748	1,577	5.4	4.9	10.3
Highland	310	1,063	1,373	2.0	6.8	8.8
Isle of Wight	1,297	1,035	2,332	10.2	8.2	18.4
James City	602	732	1,334	9.7	11.7	21.4
King and Queen	1,093	1,105	2,198	7.4	7.5	14.9
King George	107	689	796	2.1	13.3	15.4
King William	765	834	1,599	7.3	8.0	15.3

Table 9. - Virginia (cont.)

County	Total volume			Volume per average acre		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	M cords	M cords	M cords	Cords	Cords	Cords
Lancaster	385	322	707	6.8	5.6	12.4
Lee	35	592	627	0.3	4.8	5.1
Loudoun	169	838	1,007	1.7	8.6	10.3
Louisa	879	1,513	2,392	3.7	6.4	10.1
Lunenburg	1,099	1,339	2,438	5.5	6.7	12.2
Madison	248	512	760	3.2	6.5	9.7
Mathews	536	153	689	17.7	5.0	22.7
Mecklenburg	1,429	1,540	2,969	6.3	6.7	13.0
Middlesex	394	391	785	7.5	7.5	15.0
Montgomery	202	666	868	1.5	5.1	6.6
Nansemond	1,722	1,085	2,807	9.9	6.2	16.1
Nelson	185	1,202	1,387	1.0	6.1	7.1
New Kent	891	790	1,681	8.6	7.7	16.3
Norfolk	321	1,160	1,481	2.2	7.8	10.0
Northampton	1,231	90	1,321	22.8	1.7	24.5
Northumberland	468	553	1,021	6.1	7.2	13.3
Nottoway	697	890	1,587	5.3	6.7	12.0
Orange	349	729	1,078	2.7	5.7	8.4
Page	161	268	429	2.1	3.4	5.5
Patrick	369	1,120	1,489	2.0	6.2	8.2
Pittsylvania	2,017	1,873	3,890	5.7	5.2	10.9
Powhatan	727	793	1,520	5.2	5.7	10.9
Prince Edward	694	875	1,569	4.6	5.7	10.3
Prince George	528	741	1,269	4.4	6.2	10.6
Prince William	261	785	1,046	2.4	7.1	9.5
Princess Anne	422	533	955	6.8	8.6	15.4
Pulaski	210	383	593	1.9	3.5	5.4
Rappahannock	50	277	327	1.0	5.8	6.8
Richmond	451	685	1,136	5.9	9.0	14.9
Roanoke	255	264	519	2.2	2.2	4.4
Rockbridge	319	1,142	1,461	1.6	5.6	7.2
Rockingham	342	1,365	1,707	1.4	5.8	7.2
Russell	44	551	595	0.4	5.1	5.5
Scott	61	848	909	0.3	5.1	5.4
Shenandoah	293	892	1,185	1.9	5.6	7.5
Smyth	109	508	617	0.9	4.1	5.0
Southampton	2,702	2,447	5,149	10.3	9.3	19.6
Spotsylvania	722	1,396	2,118	3.5	6.9	10.4
Stafford	308	837	1,145	2.7	7.3	10.0
Surry	1,234	780	2,014	9.7	6.2	15.9
Sussex	2,389	1,461	3,850	9.9	6.0	15.9
Tazewell	53	992	1,045	0.3	5.9	6.2
Warren	47	266	313	0.9	5.2	6.1
Warwick	173	65	238	11.9	4.5	16.4
Washington	159	608	767	1.2	4.8	6.0
Westmoreland	438	688	1,126	5.3	8.2	13.5
Wise	59	1,199	1,258	0.3	5.8	6.1
Wythe	299	441	740	2.2	3.2	5.4
York	538	348	886	11.0	7.1	18.1
All counties	59,815	87,138	146,953	4.2	6.0	10.2

1/Volume on commercial forest land.

2/Included with Fairfax County.

Forest Survey Reports
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Miscellaneous Publications

No. 533 - North Carolina Forest Resources and Industries. January 1944

No. 552 - South Carolina Forest Resources and Industries. November 1944

FOREST SURVEY RELEASE NO. 20 JUNE 1, 1945

SOUTH CAROLINA FOREST GROWTH AND DRAIN
1936 - 1943

by

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A FOREST SURVEY PROGRESS REPORT

J. W. Cruikshank, Regional Survey Director

U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

Appalachian Forest Experiment Station
I. T. Haig, Director
Asheville, N. C.

PREFACE

Through the McSweeny-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act, and each of the 11 Regional Forest Experiment Stations is responsible for the work in its territory. In the Middle Atlantic States the Forest Survey is an activity of the Appalachian Forest Experiment Station, Asheville, North Carolina.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth. Determination of the current rate of timber growth.

3. Drain. Determination of the amount of industrial and domestic wood used, and the total loss resulting from fire, insects, disease, suppression, and other causes.

4. Requirements. Determination of the current and probable future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

This progress report summarizes growth and drain information for the 8-year period, 1936-1943, and deals specifically with forest growth and drain, by survey units, for each year since the original forest inventory of the State.

Grateful acknowledgment is given Miss Agnes Creasman, of the Survey staff, who was responsible for compiling most of the statistics in this report.

CONTENTS

Page

SUMMARY- ii
THE FOREST RESOURCE, 1936- 2
  Area - 2
  Timber Volume- 3
    Amount of saw timber - 3
    Quantity in cords- 4
NET GROWTH OF TIMBER, 1936-1943- - - - - - - - - - - - - - - - - 5
  Growth in Board Feet - 5
  Growth in Cords- 6
FOREST DRAIN, 1936-1943- 7
  Drain for All Products - 7
  Drain for Lumber - 9
  Drain for Pulpwood - 11
  Drain for Fuelwood - 13
  Drain for Veneer - 14
TREND IN SUPPLY OF TIMBER- 16
  Trend in Total Supply of Pine- - - - - - - - - - - - - - - - - - 16
  Trend in Total Supply of Hardwood- - - - - - - - - - - - - - - - 18
  Trend in Timber Supply by Regions- - - - - - - - - - - - - - - - 19
    Northern coastal plain - 19
    Southern coastal plain - 22
    Piedmont - 23
CONCLUSIONS- 24
APPENDIX - 26
  Definition of Terms- 26

Tables, 1936-1943

    Forest drain by survey unit, commodity, and species group- 27-34
    Comparison of forest growth and drain- - - - - - - - - - 35-42

SUMMARY

The volume of sound, live timber in South Carolina, as of January 1, 1944, amounted to 126 million cords, including 29.7 billion board feet of saw timber. This represents a gain in 8 years, since January 1, 1936, of 2.1 million cords in total growing stock but a loss of 407 million board feet in standing saw timber.

Accordingly, the forest growing stock in South Carolina has held up reasonably well for the State as a whole--the above changes representing a 1.7 percent increase in total volume and only 1.4 percent loss in the amount of saw timber. A closer analysis, however, will show that conditions regarding certain species, size classes, and geographical units are far from satisfactory, as, for example, (1) the supply of cypress saw timber is rapidly being exhausted, (2) a serious shortage of both pine and good quality hardwood saw timber is in prospect for the northern coastal plain area, and (3) the general trend in the State is toward a stand of immature, low quality hardwoods. Furthermore, in several counties of the piedmont, where there is a heavy concentration of pulpwood cutting, this trend has been greatly accelerated.

As an item of drain, pine pulpwood showed the most spectacular increase. In 1936 only 1 percent of the pine went into pulpwood; by 1943 nearly one fourth of the pine cut was for this product. In order of importance lumber, fuelwood, pulpwood, and veneer were the principal items of drain, comprising 93 percent of the total from 1936 through 1943. In those 8 years the cut of saw timber amounted to 11.8 billion board feet and the drain on all sound trees totaled 38.5 million cords.

During the 3 war years, 1941-1943, the average annual drain for all products was 28 percent more than the average for the previous 5 prewar years. The effect of the war on the volume of timber cut for fuelwood and veneer was insignificant, but pulpwood production was at an all-time high, and the cut of sawlogs was at a near-record rate.

The net growth of saw timber in the 8 years was 11.4 billion board feet. During the same period growth of the total sound-tree growing stock amounted to 40.5 million cords. The net change in growing stock resulting from comparison of net increment with commodity drain is summarized in the following tabulation:

(Saw timber - in million board feet)

Item	Pine	Cypress	Hardwood	Total
Growing stock, Jan. 1, 1936	18,431	1,381	10,305	30,117
Growing stock, Jan. 1, 1944	18,398	1,115	10,197	29,710
Net change	-33	-266	-108	-407
	Percent	Percent	Percent	Percent
	-0.2	-19.3	-1.0	-1.4

(All sound trees, 5.0 inches d.b.h. and larger - in M cords)

Item	Pine	Cypress	Hardwood	Total
Growing stock, Jan. 1, 1936	66,206	4,172	53,574	123,952
Growing stock, Jan. 1, 1944	65,855	3,556	56,591	126,002
Net change	-351	-616	+3,017	+2,050
	Percent	Percent	Percent	Percent
	-0.5	-14.8	+5.6	+1.7

SOUTH CAROLINA FOREST GROWTH AND DRAIN

1936 - 1943

The purpose of this report is to show what has happened to South Carolina's timber supply during the eight years from January 1, 1936, to January 1, 1944. It includes a brief description of the forest resource as it was in 1936, detailed discussion of forest growth and drain during the 8-year period, and the trend in the supply of sound, live timber. Summary tables and charts are given in the text and are mainly concerned with the State as a whole. More comprehensive tables for each of the eight years are contained in the Appendix. One set shows by major subdivisions of the State (figure 1) annual drain by products in cords and board feet. A second set presents comparisons of growth and drain.

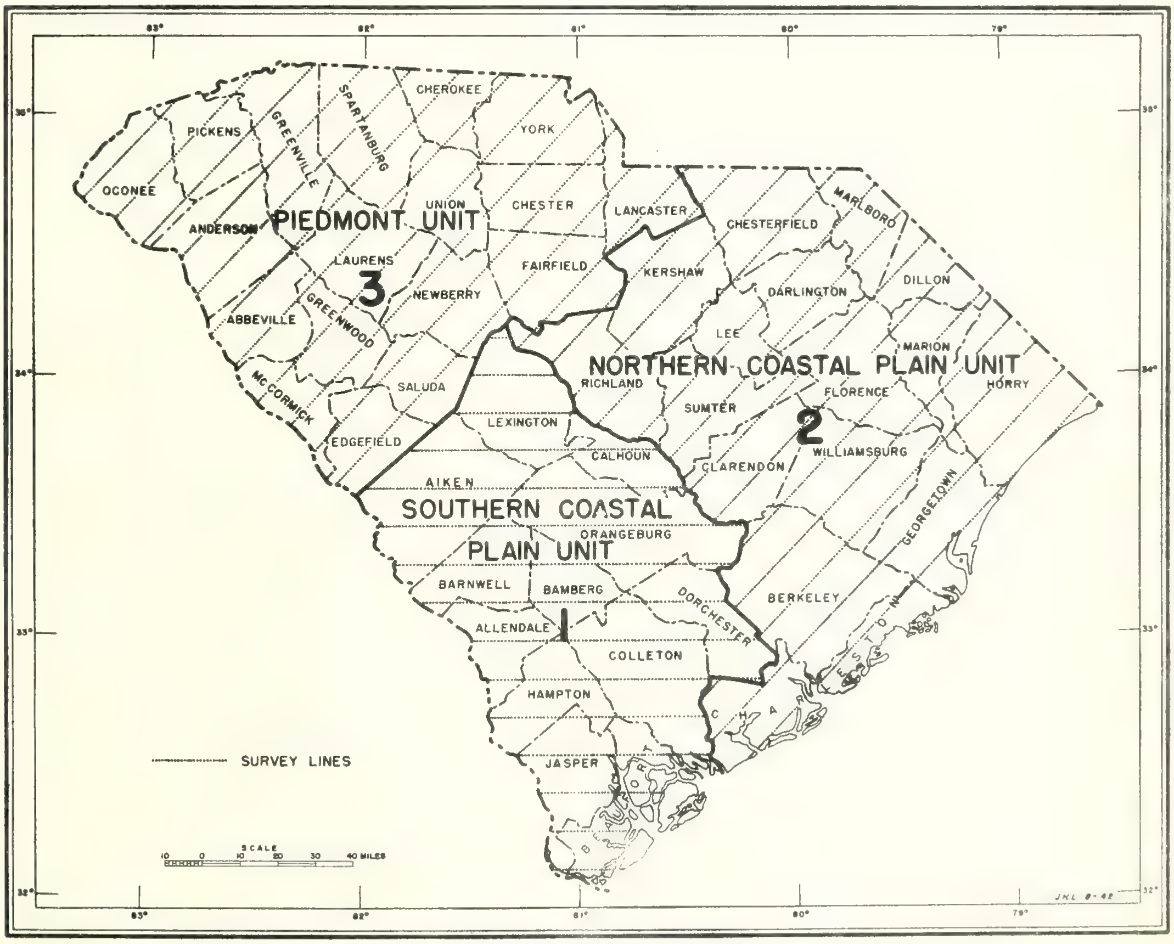

Figure 1. - Location of units and approximate survey lines in South Carolina.

THE FOREST RESOURCE, 1936[1]

Area

In 1936 about 10.7 million acres (55 percent) of South Carolina's area was forest land (table 1). Approximately 25,500 acres consisted of brushy swamps, sand dunes, and other nonproductive areas. All of the remainder was classified as capable of producing a timber crop of commercial value. Within this large area of productive forest, the pine types predominated--7.8 million acres of pine as compared with 2.9 million acres of hardwoods (figure 2).[2]

Table 1. - Land use in South Carolina, 1936

Land use	Total area	
	Acres	Percent
Forest:		
Commercial	10,678,600	55.0
Noncommercial	25,500	0.1
Agriculture	7,032,900	36.2
Abandoned cropland	551,800	2.8
Other nonforest	1,136,800	5.9
All uses	19,425,600	100.0

In its inventory of the State's forests the Forest Survey classed as saw timber all stands containing a volume of at least 600 board feet per acre. About 58 percent of the forest area (6.2 million acres) supported saw-timber stands. However, only 1.6 million acres consisted of old growth, of which 56 percent had been partly cut-over for selected species such as cypress. A few large blocks of old growth remained in the State, and these were owned mostly by large estates, game clubs, and lumber companies on the lower coastal plain.

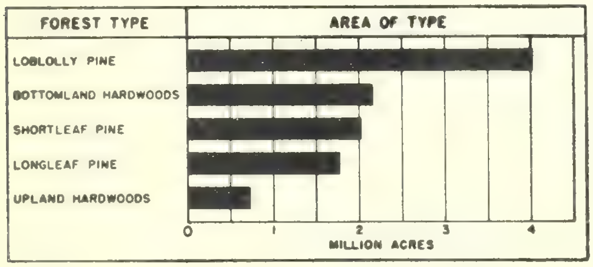

Figure 2. - Area of forest types in South Carolina, 1936.

The under-sawlog-size stands were subdivided into three condition classes: cordwood, reproduction, and clear-cut. The cordwood areas totaled 3.7 million acres and were most prominent in the piedmont where 44 percent of the forest acreage was of this condition class. Reproduction, chiefly less than one inch in diameter, occupied about 0.7 million acres. Clear-cut land amounted to 0.1 million acres, and almost one-half was found in the sand hill region of the coastal plain, where the dense understory of scrub oak remaining after the removal of the longleaf pine effectively prevented restocking by commercial species. Elsewhere the clear-cut area was chiefly recently cut-over or burned lands, upon which natural restocking had not begun.

1/For a more complete description of the forest resources of South Carolina see: Frothingham, E. H., and Nelson, R. M. South Carolina Forest Resources and Industries. USDA Misc. Pub. 552, 77 pp., illus., 1944.

2/See Appendix for definitions of terms used in this report.

Timber Volume

The volume of timber in the State, as measured by the Forest Survey in 1936, amounted to 30.1 billion board feet, or 158 million cords. The board-foot and cordwood volumes apply to the same material, except the latter contains, in addition to sawlogs, the tops of saw-timber trees, trees too small for sawlogs, and the sound material in cull trees.

Amount of saw timber: All saw timber was measured in terms of the International $\frac{1}{4}$-inch rule, which approximates the actual recoverable board-foot volume in terms of rough, green lumber. The quantity of hardwood contained in trees 13.0 inches and larger in diameter breast high amounted to about 10.3 billion board feet. The cypress inventory, which included trees 9.0 inches and larger d.b.h., was 1.4 billion feet. Pine volume, of a diameter range the same as cypress, totaled 18.4 billion feet. The distribution of saw-timber volume by species group is shown in figure 3. The greatest amount of saw timber was in the 16-county area forming the northern coastal plain. Estimated volume in that section amounted to 14.8 billion board feet, almost one-half of the State's total stand. The southern coastal plain, consisting of 12 counties, contained 9.5 billion feet. In the 18-county piedmont area only 5.8 billion feet of saw timber was found.

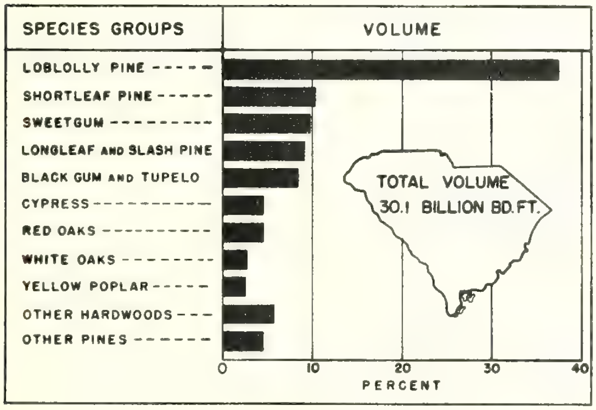

Figure 3. - Percent distribution of saw-timber volume by species groups in South Carolina, 1936.

About 40 percent of the saw timber volume (11.6 billion board feet) was in the remaining old-growth forest. Three-fourths of the hardwood and cypress saw timber but only one-fourth of the pine were in this condition class. In the second-growth forest 17.4 billion board feet was in sawlog-size stands, and only 1.1 billion in the less advanced cordwood and reproduction areas.

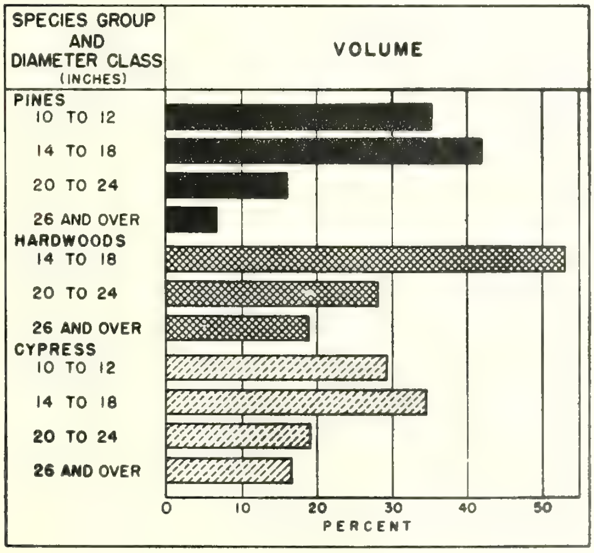

Figure 4. - Board-foot volume by species group and diameter group, South Carolina, 1936.

As may be seen in figure 4, the saw-timber stand of 1936 consisted of a large proportion of small diameter trees. Consequently, even at that time, the supply of large trees yielding lumber and other forest products of high quality was limited.

Quantity in cords: In 1936, the total sound volume in living trees 5.0 inches d.b.h. and larger was 158 million standard cords (hardwood 53 percent, pine 43 percent, and cypress 4 percent). This was in contrast to the board-foot volume which was 61 percent pine, 34 percent hardwood, and 5 percent cypress. A principal reason for the large hardwood volume in cords was that the proportion of cull trees, which are included in the cordwood volume, was much greater for hardwood than pine (figure 5). Of considerable significance was the fact that only 16.0 million cords of pine were contained in trees of less than sawlog size, indicating that an expanded pulpwood industry in the State would offer heavy competition to the lumber industry for the much larger volume contained in the saw-timber trees.

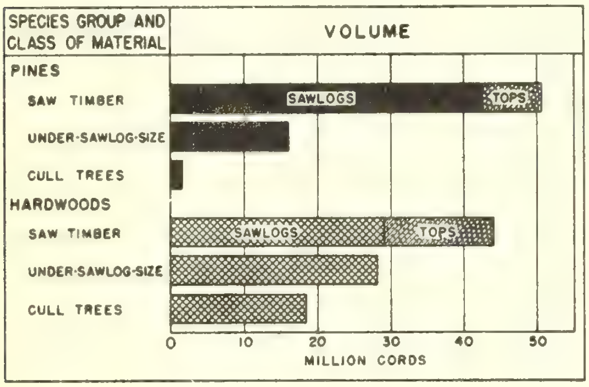

Figure 5. - Volume in cords by species group and class of material, South Carolina, 1936

The largest cordwood volume, 74.6 million cords, was in the northern coastal plain. About 47.1 million cords were in the southern coastal plain and 36.5 million in the piedmont. About 38 percent of the cordwood volume in the northern coastal plain was pine, as was 42 percent in the southern coastal plain and 56 percent in the piedmont.

NET GROWTH OF TIMBER, 1936-1943

The estimated growth is based upon an analysis of increment cores from 22,000 sample trees located on the inventory plots of 1936. Net growth is the quantity of wood produced by the forest growing stock, deducting the volume lost through mortality but not that removed by cutting. Fires, insects, disease, wind, logging damage, and tree competition are the usual causes of tree mortality. During the 8-year period these factors resulted in a loss of 2.4 billion board feet from the saw-timber stand, or 12 million cords from the entire growing stock. Another factor resulting in heavy mortality during the period was the impounded water of the Santee-Cooper Power and Navigation Project. Although 228 million board feet of sawlogs was salvaged prior to flooding the reservoirs, an additional 94 million feet was destroyed by the backwater. The total volume lost was about 768 thousand cords. Forest land removed from future production amounted to about 121,000 acres.

Growth in Board Feet

Net growth for the eight years amounted to 11.4 billion board feet, or the equivalent of an average annual growth of 1.4 billion feet. As shown in table 2, the annual net growth of saw timber, particularly in pine, increased through 1940. Contributing to this increased growth were surpluses of growth over drain, which by the end of 1939 had added 696 million board feet or 2 million cords to the pine growing stock. Significant in the decline of growth after 1940 were the reductions in both the saw-timber and total growing stock as a result of war drain. In the three years, 1941 to 1943, the saw-timber growing stock suffered a reduction of about 1 billion board feet, and the total stand lost 2.1 million cords.

Table 2. - Net growth of timber in South Carolina, 1936-1943

Year	Saw timber[1]			All sound trees-5.0" d.b.h. and larger		
	Pine	Hardwood[2]	Total	Pine	Hardwood[2]	Total
	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords
1936	975	405	1,380	3,215	1,844	5,059
1937	1,040	403	1,443	3,363	1,871	5,234
1938	1,049	404	1,453	3,340	1,841	5,181
1939	1,052	403	1,455	3,349	1,853	5,202
1940	1,053	402	1,455	3,344	1,852	5,196
1941	1,047	401	1,448	3,321	1,853	5,174
1942	1,021	318	1,339	3,157	1,205	4,362
1943	1,029	399	1,428	3,263	1,868	5,131
Avg.	1,033	392	1,425	3,294	1,773	5,067

[1] Measured by International $\frac{1}{4}$-inch rule.
[2] Includes cypress.

The principal reason for the great decline in net growth in 1942, as compared with other war years, is that the entire mortality loss resulting from the Santee-Cooper Project was charged to that year.

Growth in Cords

Net growth from the sound-tree growing stock, 5 inches d.b.h. and over, totaled 40.5 million cords in the 8-year period. The influence of war drain and the mortality loss arising from the Santee-Cooper Project are also reflected in the net growth of the total stand. In the prewar period the average annual growth was 5.2 million cords as compared with 4.9 million in the war years. However, the full effect of war drain on net growth is not entirely revealed by this comparison. What has happened is that the increased cut was concentrated chiefly in the older trees of sawlog or near-sawlog size. This reduced the average age of the stand and, consequently, a greater proportion of the net growth now, as compared with prewar years, is on young trees having little or no commercial value because of their size.

FOREST DRAIN, 1936-1943

Forest drain consists of the volume of wood cut from the forest in the form of sound, live trees 5.0 inches d.b.h. and larger. Volume removed in the form of dead timber, sound or rotten cull trees, or the tops of hardwood is not included in the drain computations.

Following the inventory of forest land, annual investigations were made to determine the amount of forest drain. This involved obtaining consumption or production data from primary wood-using industries, such as sawmills, veneer plants, pulp mills, cooperage plants, shingle mills, small dimension manufacturers, shuttle block plants, and handle producers. In addition, contacts were made with producers of primary forest products such as hewn ties, poles and piling. Special investigations were made to determine fuelwood production for domestic as well as industrial uses. Data were collected as to the amount of wood removed for miscellaneous farm uses such as: fence posts, stakes for various crops, logs for tobacco barns and other buildings, wood for the repair of implements and vehicles, and many other uses. Consumers of wood located outside of South Carolina, but drawing at least part of their requirements from the State, were also contacted.

Drain for All Products

During the period 1936 to 1943, inclusive, a total of 11.8 billion board feet of saw timber was cut for all uses (table 3). The heaviest cut was in pine, which comprised 70 percent of the saw timber removed. The total volume cut (trees 5.0 inches d.b.h. and larger) during the same period amounted to 38.5 million cords, also about 70 percent pine.

Table 3. - Timber cut for all products in South Carolina, 1936-1943

Year	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pine	Hardwood[1]	Total	Pine	Hardwood[1]	Total
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
1936	839,600	403,600	1,243,200	2,684,700	1,315,500	4,000,200
1937	858,800	428,100	1,286,900	2,853,500	1,456,500	4,310,000
1938	773,400	400,400	1,173,800	2,591,500	1,382,700	3,974,200
1939	947,900	399,600	1,347,500	3,123,700	1,401,100	4,524,800
1940	1,039,800	458,000	1,497,800	3,372,600	1,554,700	4,927,300
1941	1,245,500	533,300	1,778,800	3,922,900	1,718,900	5,641,800
1942	1,314,300	474,600	1,788,900	4,109,400	1,553,900	5,663,300
1943	1,278,900	413,300	1,692,200	4,044,600	1,403,000	5,447,600

[1] Includes cypress.

The demand for wood as a war material dates from the summer of 1940 when the Army began to buy lumber for training camps. Although Army purchases began in midyear, most of the material procured probably came from stocks on hand, which at that time were at a high level. The step-up in production to offset stock depletions and to take care of expanding Army purchases probably did not occur until late 1940 or early 1941. Consequently, for the purpose of analyzing drain as affected by war demands, 1941 is assumed to be the beginning of the war period. Saw-timber drain during the years 1941 through 1943 averaged 1.8 billion board feet annually, or 34 percent above the 1.3 billion average annual cut during the prewar years 1936 to 1940. The increase in total drain (trees 5.0 inches d.b.h. and larger) was not as marked, but even so was 28 percent more than in the prewar period.

Before drain increased as a result of war demands, the heaviest cut occurred in 1940 when 4.9 million cords of wood were harvested. Of the three years of war production, the heaviest cutting was in 1942 when about 5.7 million cords were removed from the growing stock. Drain in 1943 was about 4 percent less. The drop in that year was principally due to labor and equipment shortages. These difficulties will probably keep drain below that of 1942 for the duration in spite of the continued great demand for wood as a war material.

As an item of drain, pine pulpwood showed the most spectacular increase. In 1936, only 1 percent of the pine went into pulpwood, by 1943 nearly one-fourth of the annual cut went for this product (table 4). In order of importance lumber, fuelwood, pulpwood, and veneer were the principal items of drain, together comprising 94 percent of the total in 1943.

Table 4. - Distribution of forest drain in South Carolina by commodities, 1936 as compared to 1943

Commodity	Pine		Hardwood[1]		All species	
	1936	1943	1936	1943	1936	1943
	Percent	Percent	Percent	Percent	Percent	Percent
Lumber	58.6	51.1	31.7	31.0	49.7	45.9
Veneer	1.3	0.1	14.8	16.2	5.8	4.3
Cooperage	0.7	0.4	1.9	1.9	1.1	0.8
Pulpwood	1.3	23.2	1.0	2.8	1.2	17.9
Poles and piling	2.7	1.8	-	-	1.8	1.3
Crossties	1.6	1.3	3.2	1.6	2.1	1.4
Fuelwood	30.3	20.3	43.8	43.6	34.8	26.3
Other manufactures	0.3	0.1	1.2	1.5	0.6	0.5
Misc. farm use	3.2	1.7	2.4	1.4	2.9	1.6
All commodities	100.0	100.0	100.0	100.0	100.0	100.0

1/Includes cypress.

Drain for Lumber

In South Carolina, the cut of saw timber for lumber is chiefly by small mills, whose annual production rate is less than 5 million board feet. In 1943 about 1,250 of these mills accounted for three-fourths of the lumber manufactured. Twenty-two mills, sawing from 5 million to about 30 million feet per year, produced the remainder of the lumber.

Census records reveal that the State's output of lumber, which prior to 1890 had not exceeded 0.2 billion board feet annually, reached its first peak in 1909 when about 0.9 billion feet were sawed. From that year through 1935 production averaged 0.7 billion board feet per year, reaching a high of 1.1 billion feet both in 1923 and 1929, and a low of 0.3 billion in 1934. As may be seen in table 5, the quantity of timber cut for sawlogs was less than the previously cited 26-year average in only one of the five years preceding 1941. In the three war years the average was about 1 billion feet, with 1943 slightly under that figure. Sawlog production during the remaining war period probably will not exceed the 1943 level.

Table 5. - Timber cut for sawlogs in South Carolina, 1936-1943

Year	Pine	Hardwood[1]	Total	Change from 1936
	M bd. ft.	M bd. ft.	M bd. ft.	Percent
1936	601,400	185,900	787,300	-
1937	524,600	194,800	719,400	-9
1938	442,700	181,200	623,900	-21
1939	566,800	199,100	765,900	-3
1940	630,700	244,200	874,900	+11
1941	802,200	297,500	1,099,700	+40
1942	824,600	253,400	1,078,000	+37
1943	789,200	194,200	983,400	+25

[1] Includes cypress.

Over most of the State, the saw-timber growing stock has not been depleted to the point where operable stumpage is no longer available. An outstanding exception concerns the largest mills (40,000 bd. ft. or greater daily capacity) of which there were 18 in 1936, and only 9 in 1943. As the remaining old-growth stands or extensive areas of sawlog-size second growth are depleted, most of these may be expected to shut down. In the case of the small mills, which form the backbone of production, few have ceased operating for lack of stumpage. On rare occasions, during the war period, reports of temporary closures were received. In most cases operations were resumed in a week or two. Many mill operators will agree, however, that suitable stumpage is becoming increasingly harder to find, that the average tree diameter is smaller, and that volume per average logging chance is decreasing steadily. Tracts containing 1 million or more board feet are scarce, and most activity is centered in stands of less than 500 thousand feet.

In pine the most acute shortage is in trees yielding large, dense, structural timbers. Competition is very keen among "bill" timber operators for such stumpage, and extremely high prices have been paid. One sale of 50 longleaf pine trees brought $35 per thousand board feet, although most of the high-quality pine stumpage ranges from about $18 to $25. Average quality pine stumpage is obtainable at from $10 to $15 per thousand feet.

War production has made heavy inroads on the remaining supply of cypress saw timber. Although practically all items of cypress have been in great demand, lumber suitable for tank and boat stock has been most urgently needed. This has resulted in extremely heavy cutting in the best cypress stands, of which only a few remain.

Table 6. - Comparison of hardwood lumber production by species in South Carolina in 1936 and 1943

Species	Lumber production	
	1936	1943
	Percent	Percent
Ash	4.5	4.7
Cottonwood	1.8	1.5
Elm	0.2	1.2
Hickory	Negl.	0.8
Maple	5.1	4.6
Oak	9.8	19.6
Sweetgum	60.8	40.4
Sycamore	0.8	1.3
Tupelo & blackgum	14.2	19.2
Yellowpoplar	2.8	5.9
Others	Negl.	0.8
All species	100.0	100.0

There have been some significant changes in the distribution of the cut among hardwood species as a consequence of the war (table 6). The demand for low-grade lumber for dunnage, boxes, and crating for war materials largely accounted for the increase in the proportion of oak, blackgum, and yellowpoplar cut in 1943 as compared with 1936. Also contributing to the increased production of these items was willingness of many consumers, particularly the nonessential ones, to accept inferior species or grades in substitution for those made scarce by war demands. The reduction in the proportion of sweetgum cut is largely the result of a restriction in civilian furniture output. The net result of these production shifts has been to spread the drain more evenly over the hardwood growing stock, thus, at least partially checking the trend toward a future stand of low-value species.

Lumber production statistics over the past several decades show periods of peak manufacture followed by years of low activity. Chances are that the same trend will follow the current peak period, but not for some time to come. Federal restrictions have caused the bulk of war production to be channeled to essential war users. As a consequence, a tremendous demand for lumber has developed among civilian users. New homes and new business structures are needed. A high in farm construction may be expected; and long-delayed repairs in many urban as well as rural structures must soon be made. Damage to the saw-timber growing stock as a result of war demands for lumber may be aggravated further by the anticipated heavy, if not heavier, drain to meet postwar lumber requirements.

With the exception of a few large operators, there has been no sincere effort on the part of lumbermen toward improved cutting practices. Very little forest land is owned by the lumber industry. Therefore, most of the cutting is on land owned by farmers or other private individuals. Stumpage transactions are usually on a lump sum basis which involves the payment of an agreed amount for the standing timber. Consequently, this is an incentive for lumbermen to cut all of the merchantable volume. For all practical purposes, the result is a preponderance of clear-cutting operations, the tracts being cut down to a few suppressed "whips," crooked trees, and some advanced reproduction of pine or hardwood. Offsetting this, to a certain extent, is a growing tendency on the part of landowners to sell stumpage on a diameter-limit basis. In sales of saw timber this usually results in prohibiting the removal of trees less than 12 inches in stump diameter. Generally speaking, most areas cut over on a diameter-limit basis are in a better productive condition than the areas where no cutting restrictions were in effect. However, cutting to a low minimum diameter in many of the stands results in the removal of the larger dominant trees and the leaving of a residual stand comprised chiefly of defective or small suppressed trees. Vigorous growth and seed production is hardly to be expected from such areas until considerable time has elapsed.

Of increasing importance is the service provided farmers and small landowners by the State Commission of Forestry. For a small fee timber stands are marked for selective cutting by foresters. During the year ending June 30, 1944, about 25.5 million board feet and 1,600 cords were marked. A substantial contribution toward better forest practices on private lands is also being made through the efforts of the Extension Service, U. S. Forest Service, and other public agencies working within the State.

Drain for Pulpwood

In South Carolina, previous to 1937, there had been only one small pulp mill--the Carolina Fibre Company mill at Hartsville. This produced corrugated board and wrapping paper from blackgum. Mills in adjoining states drew but lightly on South Carolina for their wood supplies.

All this was changed in 1937 by the completion of two new paper mills--the West Virginia Pulp and Paper Company mill at Charleston, and the Southern Kraft mill at Georgetown--with a combined daily capacity of 1,015 tons of sulfate pulp and 950 tons of Kraft paper, representing an annual wood requirement of 575,000 cords of pine. Near capacity output was attained by these mills in 1939. To meet increased demands as a result of the war, additional units were added to these mills, and in 1942 their combined capacity was almost 2,000 tons of sulfate pulp per 24 hours.

The pattern of expansion in the State's pulp and paper industry is well reflected in the statistics of pulpwood drain (table 7). In 1936, only 49,000 cords were removed. In 1937 the drain jumped to 394,000 cords, and in 1939 was 551,000 cords. In the war years 1941 through 1943 the annual cut of pulpwood averaged 906,000 cords--about 19 times greater than in 1936 when only the Hartsville plant was in operation.

Not all of the pulpwood was consumed by South Carolina plants. In 1943, for example, six out-of-state plants obtained part of their wood from

Table 7. - Timber cut for pulpwood in South Carolina, 1936-1943

Year	Northern coastal plain	Southern coastal plain	Piedmont	Total	Change from 1936
	Cords	Cords	Cords	Cords	Percent
1936	17,000	8,200	23,400	48,600	---
1937	252,700	90,000	51,000	393,700	+710
1938	258,300	87,800	38,200	384,300	+691
1939	370,600	121,400	58,600	550,600	+1,033
1940	413,400	159,700	97,200	670,300	+1,279
1941	408,200	279,000	110,700	797,900	+1,542
1942	483,100	335,100	127,900	946,100	+1,847
1943	340,200	286,400	348,200	974,800	+1,906

South Carolina. One was a Georgia plant, two were located in North Carolina, two in Virginia, and one in Tennessee. The combined drain by these plants in 1943 equaled 250 thousand cords, of which 27 thousand were hardwood and the remainder pine. In other words, one-fourth of the pulpwood cut from the forest growing stock in South Carolina went to supply plants in neighboring states.

In the 8-year period, 1936-1943, pulpwood drain totaled 4.8 million cords from the three regions of the State as follows: northern coastal plain, 53 percent; southern coastal plain, 29 percent; and piedmont, 18 percent. In six of the years, the cut was heaviest in the northern coastal plain, ranging from a low of 17 thousand cords in 1936 to a peak of 483 thousand cords in 1942. This was also a peak year in the southern coastal plain. In 1943, however, the heaviest cut was in the piedmont, amounting to 348 thousand cords.

Table 8. - Timber cut for pulpwood by major species groups in South Carolina, 1936-1943

Year	Pine	Hardwood	
	Cords	Cords	Percent
1936	35,800	12,800	26
1937	364,400	29,300	7
1938	362,700	21,600	6
1939	533,600	17,000	3
1940	602,800	67,500	10
1941	727,000	70,900	9
1942	891,900	54,200	6
1943	936,000	38,800	4
All years	4,454,200	312,100	7

For the entire period the volume of hardwood removed as pulpwood amounted to only 7 percent of the total (table 8). In 1936, when only the Hartsville plant was in operation, one-fourth of the pulpwood cut was hardwood. Since that time the proportion has been much smaller and has not shown an increasing trend. This situation will probably continue as long as large volumes of the more accessible and easier logged pine are available. Yet as a means of relieving the strain on the pine growing stock, the 1936 inventory of 53.8 million cords of pulping hardwoods should not be overlooked.

Table 9. - Pulpwood cut by tree-diameter class at 57 operations in South Carolina, 1943

Diameter class	Trees cut		Volume cut	
Inches	No.	Percent	Cu.ft.	Percent
6 to 8	2,248	47	15,000	20
10 to 12	2,141	44	41,900	56
14 to 18	413	9	17,800	23
20 & larger	5	Negl.	400	1
All classes	4,807	100	75,100	100

Data showing distribution of pulpwood drain by diameter class are not available for the 8-year period. In 1943, about 5 thousand tree measurements were obtained from 57 pulpwood operations in the State. Table 9 summarizes the findings, and indicates, among other things, that in 1943 about one-half the trees cut for pulpwood were less than sawlog size, but only one-fifth of the volume came from such trees.

In contrast to the lumber industry in general, the pulp and paper industry has made more progress in carrying out and promoting forestry practices in the State. As of 1943, pulp and paper company holdings in the State amounted to 512 thousand acres of forest land, largely as the result of the industry's recognition of the fact that it is to its advantage to have a large and permanent supply of pulpwood available within reasonable distance of the mills. Conservative cutting practices have been followed on these lands even though such is not the case on much of the other private forest land cut over by pulpwood contractors, particularly during the war. However, in 1943, there was a total of 18 technical foresters in the employ of pulp companies, or their contractors, as compared with only two working for lumber companies. The primary function of these foresters is the management of company holdings and to help timberland owners in marking their timber for cutting, or to conduct demonstration cuttings for the education of private landowners, and pulpwood contractors and sub-contractors.

Drain for Fuelwood

The total consumption of fuelwood in the State, in 1943, was estimated at 2.7 million cords. Fortunately for the growing stock, 1.3 million cords consisted of items such as mill waste (slabs, edgings, and trimmings), dead and cull trees, and the tops and limbs of hardwood. Nevertheless, the 1.4 million cords coming from the growing stock was second only to lumber as an item of drain.

There was no significant trend in the amount of fuelwood cut from the growing stock during the 8-year period (table 10). To a certain extent, variations in the amount cut can be attributed to fluctuations in the annual yield of flue-cured tobacco. This is particularly true of the northern coastal plain where almost one-fifth of the fuelwood drain is for tobacco curing. War-induced factors, such as population shifts, coal shortages, and scarcity of labor, have been taken into account, but none have caused a marked change in the yearly cut of fuelwood.

Table 10. - Timber cut for fuelwood in South Carolina, 1936-1943

Year	Northern coastal plain	Southern coastal plain	Piedmont	Total	Change from 1936
	Cords	Cords	Cords	Cords	Percent
1936	586,500	145,600	659,300	1,391,400	-
1937	621,100	190,300	659,300	1,470,700	+6
1938	618,300	190,300	659,300	1,467,900	+5
1939	709,600	189,100	683,000	1,581,700	+14
1940	665,400	189,100	686,000	1,540,500	+11
1941	665,400	189,100	686,000	1,540,500	+11
1942	625,600	173,800	632,100	1,431,500	+3
1943	625,600	173,800	632,100	1,431,500	+3

There is considerable room for improvement in the cutting practices followed in harvesting fuelwood. Wood dealers, in many instances, clear-cut without discriminating between high and low value trees. Much the same is true of farmers, who are the major consumers as well as harvesters of fuelwood. All too many present and potential saw-timber trees end up in a stove or fireplace, primarily as a result of the farmers' lack of interest in or knowledge of timber values.

Drain for Veneer

In the eight years, 1936 through 1943, slightly over three-fourths billion board feet of timber have been cut for veneer. Seventy-one percent of the volume removed was from the northern coastal plain, 24 percent from the southern coastal plain, and the remainder from the piedmont. Practically all of the material came from the bottom-land hardwood type and from the old-growth forest therein. Veneer logging is largely concentrated on the gum species. In 1943, for example, about 60 percent of the volume cut was sweetgum and 30 percent blackgum and tupelo. The remaining 10 percent consisted mainly of yellowpoplar, cottonwood, and sycamore.

There are 37 veneer plants located within the State. Nine of these plants are normally engaged in the manufacture of container veneer, and 28 produced various sizes and grades of commercial veneer, a large part of which is utilized by the furniture industry located in South Carolina and nearby states. Only a small part of the log supply required by these plants is shipped in from other states. For example, in 1943 only 4.7 million board feet were imported, while 79.0 million feet were obtained and used locally. Furthermore, 11.9 million feet of logs were shipped elsewhere, mainly to veneer plants associated with the furniture industry in North Carolina.

The increase in volume of veneer drain, as a result of war, has not been startling; the net effect has been to raise the average level of drain to about that of 1936 (table 11). Veneer production for furniture decreased during the war, but was offset by the demand for container and aircraft veneers. This latter class of veneer required logs of highest quality which ordinarily were processed into the best grades of furniture veneer. However, there is no evidence that the drain on the best veneer timber increased as a result of the war. Furthermore, the increased demand for container veneer probably resulted in the utilization of lower grade material in amounts greater than normally used, although on many operations the indiscriminate use of high-grade logs for container veneer continued.

Table 11. - Timber cut for veneer in South Carolina, 1936-1943

Year	Northern coastal plain	Southern coastal plain	Piedmont	Total	Change from 1936
	M bd.ft.	M bd.ft.	M bd.ft.	M bd.ft.	Percent
1936	81,900	17,800	-	99,700	-
1937	83,900	24,000	4,900	112,800	+13
1938	73,300	21,700	3,700	98,700	-1
1939	56,200	22,200	5,400	83,800	-16
1940	60,400	21,000	6,100	87,500	-12
1941	71,300	24,700	7,100	103,100	+3
1942	64,100	26,700	5,800	96,600	-3
1943	63,900	30,600	5,900	100,400	+1

Logging for veneer logs is quite similar to the general run of hardwood logging operations in the State. Logs of high quality are generally obtained in conjunction with hardwood saw-timber operations in old-growth bottom-land hardwoods. Container veneer plants and many of the commercial veneer producers purchase tracts of hardwood timber and log them off about as clean as the lumbermen do. Some plants depend, at least in part, on veneer bolts cut and delivered by farmers. In general, regardless of the source of logs, small attention is given to conservative cutting practices, or to the management of timber tracts with the objective of continuous production of quality veneer species.

TREND IN SUPPLY OF TIMBER

Eight years of cutting have brought about some changes in the growing stock. From the standpoint of total volume, however, the change has been slight. The quantity of saw timber was reduced from 30.1 billion to 29.7 billion board feet, or only 1.4 percent less than the 1936 volume. On the other hand, the total growing stock (5 inches d.b.h. and larger) increased from 124 million[1] to 126 million cords, representing a slight gain of 1.7 percent in total volume. This was due entirely to an increase in the total hardwood growing stock, which amounted to 5.6 percent more than in 1936. The total volume of pine decreased only 0.5 percent, but the cypress growing stock lost 14.8 percent of its 1936 volume (table 12).

Trend in Total Supply of Pine

The effect of growth and drain upon the pine growing stock is shown in figure 6. In this illustration drain is expressed as a percentage above or below net growth. In the case of saw timber, the curve shows that drain was less than growth during the five years preceding the war and, as a result, the volume of saw timber increased about 4 percent. However, in the following three war years, drain exceeded growth in an amount sufficient to wipe out this gain and to lower the volume of growing stock 0.5 percent below the 1936 level. This serves to emphasize the fact that the attainment of a substantial increase in volume of growing stock is often a slow process, and that gains made over a long period may be wiped out in a few years of heavy cutting.

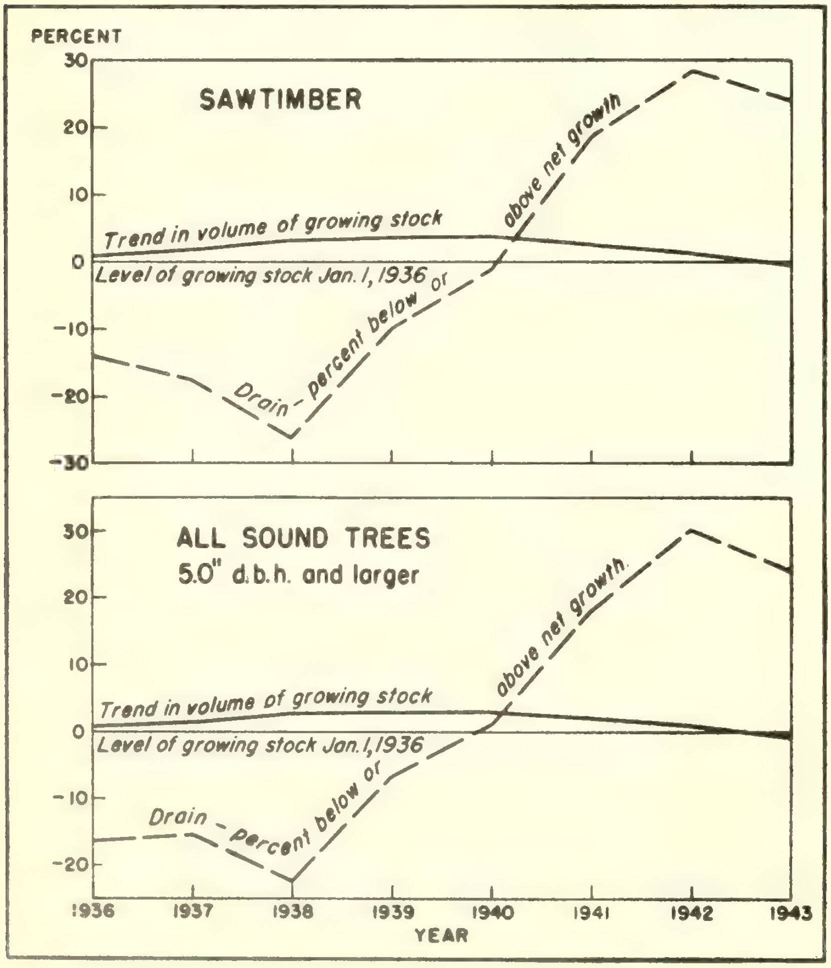

Figure 6. - The effect of growth and drain upon the pine growing stock in South Carolina, 1936-1943.

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[1] The volume of 158 million cords given on page 3 includes the sound volume in cull trees and hardwood tops while the above does not.

Table 12. - Change in volume of forest growing stock in South Carolina, 1936-1943

(Saw timber)

Item	Pine	Cypress	Hardwood	Total
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.
Growing stock, Jan. 1, 1936	18,431	1,381	10,305	30,117
Change in growing stock:				
1936	+135	-14	+15	+136
1937	+181	-21	-4	+156
1938	+276	-23	+27	+280
1939	+104	-39	+43	+108
1940	+13	-37	-18	-42
1941	-199	-57	-75	-331
1942	-293	-48	-109	-450
1943	-250	-27	+13	-264
Growing stock, Jan. 1, 1944	18,398	1,115	10,197	29,710
Net change	-33	-266	-108	-407
	Percent	Percent	Percent	Percent
	-0.2	-19.3	-1.0	-1.4

(All sound trees, 5.0 inches d.b.h. and larger)

	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1936	66,206	4,172	53,574	123,952
Change in growing stock:				
1936	+531	-34	+562	+1,059
1937	+510	-47	+461	+924
1938	+748	-54	+513	+1,207
1939	+225	-84	+536	+677
1940	-29	-81	+379	+269
1941	-602	-122	+256	-468
1942	-952	-135	-214	-1,301
1943	-782	-59	+524	-317
Growing stock, Jan. 1, 1944	65,855	3,556	56,591	126,002
Net change	-351	-616	+3,017	+2,050
	Percent	Percent	Percent	Percent
	-0.5	-14.8	+5.6	+1.7

The outlook for early gains in the volume of pine is not promising. Although three years of war have brought the volume of growing stock down to a point only slightly below 1936, it is expected that the downward trend will continue. This trend will probably last for the duration of the war and during the anticipated boom period afterwards. How long this will be in terms of years is anyone's guess. It is certain, however, that repairs to the growing stock will require limiting the annual cut to less than net growth. The rate and extent of the growing stock's restoration will depend, of course, on the amount of damage resulting from the extended period of heavy drain, and on how much and how long the cut is held below net growth.

Trend in Total Supply of Hardwood

Drain exceeded the growth of hardwood saw timber in all but three of the eight years, and in those years (1936, 1938, and 1939) the surplus growth over drain was very small (figure 7). The consequent loss in volume of growing stock was slight during the prewar years, but the downward trend gained momentum as drain increased during the war. At the end of 1943, the volume of hardwood saw timber was about 1 percent less than in 1936. About two-thirds of the loss in saw-timber volume was due to the heavy cutting of cypress. The cut of this species exceeded growth in each of the eight years, and by the end of 1943 its saw-timber volume was about one-fifth less than the amount standing in 1936. Obviously, from a commercial standpoint, the cypress is a vanishing species.

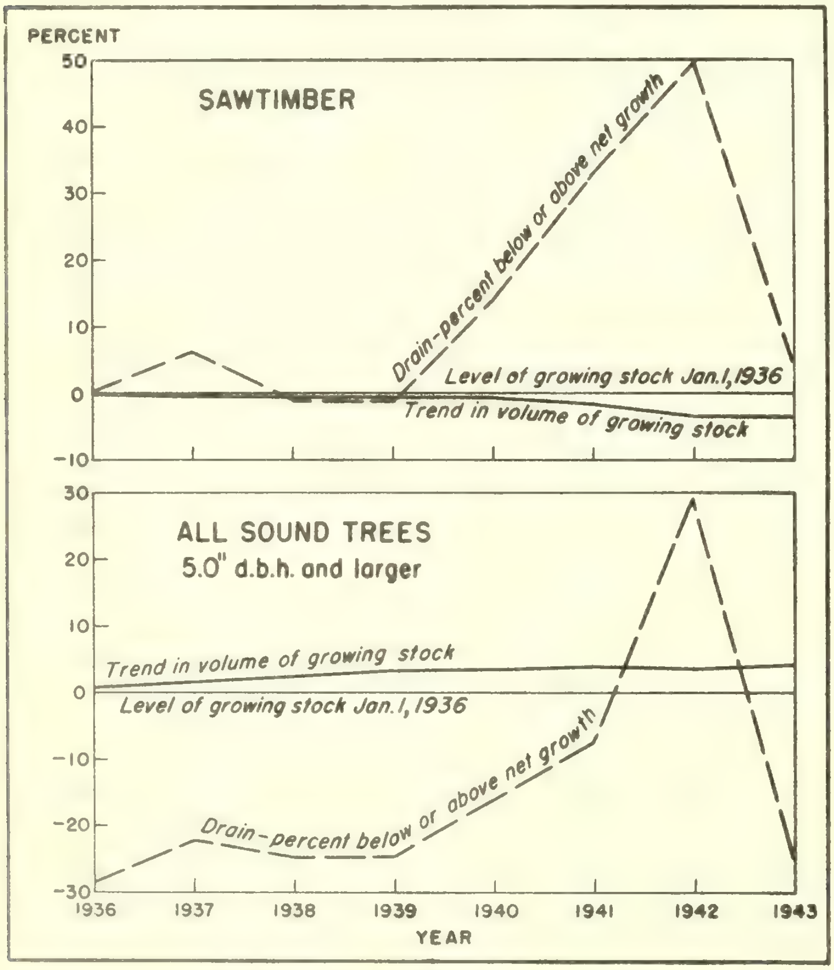

Figure 7. - The effect of growth and drain upon the hardwood growing stock in South Carolina, 1936-1943.

In direct contrast to the situation prevailing in the saw timber, the drain from the entire hardwood growing stock exceeded net growth in only one out of eight years. During the prewar years the total hardwood growing stock increased at a rate of about 1 percent annually. Since the beginning of the war, its volume has remained at about the same level, 4 percent above that of 1936. Nevertheless, a gain in total growing stock accompanied by a loss in saw-timber volume means only one thing--that the trend in the hardwoods is definitely toward a stand of immature trees.

Trend in Timber Supply by Regions

Northern coastal plain: From 1936 through 1943 the equivalent of 18.7 million cords of wood were removed from the sound-tree growing stock of this area. This means that about one-half of the total amount of sound, live timber cut within the State in those eight years came from the northern coastal plain. Almost one-half of the sawlogs and hewn ties, over one-half of the pulpwood, poles and piling, and over two-thirds of the veneer logs and cooperage bolts were derived from forests of this unit. In fact, of the major items of forest drain only two (fuelwood and miscellaneous farm uses) were produced in greater amounts elsewhere.

This concentration of cutting activity is easily understood, as almost one-half of the State's saw-timber volume and acreage, according to the 1936 inventory, was in the northern coastal plain. In spite of this apparent abundance of timber, the impact of heavy cutting on the growing stock was most severe in this unit. Only in this area did the hardwood growing stock suffer a loss in volume, amounting to 12 percent in the saw timber and 6 percent in the total stand (table 14). Although the 2 percent loss in volume of pine saw timber was exceeded somewhat in the southern coastal plain, the 8 percent drop in total pine volume was not surpassed anywhere in the State (table 13).

Contributing heavily to the loss in hardwood was the excessive mortality within the bottom-land hardwood types inundated by the Santee-Cooper Project. In addition, over two-thirds of the hardwood lumber produced in the State came from the area. No doubt the salvage operations arising from the Santee-Cooper Project has some effect on this, but the State's hardwood industry has normally depended on this area as its chief source of supply. With the flooding of the Lake Moultrie and Lake Marion reservoirs the rate of cutting on other areas of bottom-land hardwood, such as the Pee Dee River and Black River bottoms, has increased, and in the future the hardwood volume may decline even faster than in the eight years under discussion. This is particularly true if other reservoir structures, some of which are already planned, further reduce the area of productive hardwood forest.

A fact not revealed in the over-all analysis of changes in growing stock is that the best species of hardwood have been much more heavily overcut than less commercially desirable ones. The volume losses in species such as sweetgum, soft maple, yellowpoplar, and ash were undoubtedly much larger than indicated by the computed average loss. In contrast, other species, such as the low-quality, worm-infested oaks, have increased

Table 13. - Change in volume of pine growing stock by regions in South Carolina, 1936-1943

(Saw timber)

Item	Southern coastal plain	Northern coastal plain	Piedmont
	Million bd. ft.	Million bd. ft.	Million bd. ft.
Growing stock, Jan. 1, 1936	5,817	8,471	4,143
Change in growing stock:			
1936	-12	+53	+94
1937	+27	+26	+128
1938	+49	+81	+146
1939	+16	+12	+76
1940	-14	-9	+36
1941	-100	-107	+8
1942	-129	-165	+1
1943	-105	-91	-54
Growing stock, Jan. 1, 1944	5,549	8,271	4,578
Net change	-268	-200	+435
	Percent	Percent	Percent
	-4.6	-2.4	+10.5

(All sound trees - 5.0 inches d.b.h. and larger)

Item	Southern coastal plain	Northern coastal plain	Piedmont
	M cords	M cords	M cords
Growing stock, Jan. 1, 1936	19,534	27,641	19,031
Change in growing stock:			
1936	-27	+76	+482
1937	+69	-115	+556
1938	+133	+17	+598
1939	+51	-215	+389
1940	-31	-272	+274
1941	-269	-531	+198
1942	-355	-789	+192
1943	-282	-484	-16
Growing stock, Jan. 1, 1944	18,823	25,328	21,704
Net change	-711	-2,313	+2,673
	Percent	Percent	Percent
	-3.6	-8.4	+14.0

Table 14. - Change in volume of hardwood growing stock by regions in South Carolina, 1936-1943 1/

(Saw timber)

Item	Southern coastal plain	Northern coastal plain	Piedmont
	Million bd. ft.	Million bd. ft.	Million bd. ft.
Growing stock, Jan. 1, 1936	3,664	6,330	1,692
Change in growing stock:			
1936	-2	-32	+35
1937	+18	-69	+26
1938	+36	-61	+29
1939	+25	-49	+28
1940	+29	-97	+13
1941	+37	-169	-
1942	+29	-195	+9
1943	+31	-60	+15
Growing stock, Jan. 1, 1944	3,867	5,598	1,847
Net change	+203	-732	+155
	Percent	Percent	Percent
	+5.5	-11.6	+9.2

(All sound trees - 5.0 inches d.b.h. and larger)

Item	Southern coastal plain	Northern coastal plain	Piedmont
	M cords	M cords	M cords
Growing stock, Jan. 1, 1936	19,551	28,200	9,995
Change in growing stock:			
1936	+253	+43	+232
1937	+297	-80	+197
1938	+339	-70	+190
1939	+326	-71	+197
1940	+334	-156	+120
1941	+356	-327	+105
1942	+347	-844	+148
1943	+353	-68	+180
Growing stock, Jan. 1, 1944	22,156	26,627	11,364
Net change	+2,605	-1,573	+1,369
	Percent	Percent	Percent
	+13.3	-5.6	+13.7

1/Includes cypress.

in volume throughout the 8-year period; thus, stand quality as well as volume has deteriorated.

This unit contains an extensive acreage of paper company, estate, game club, plantation, and other holdings, upon which forest drain at its heaviest may not exceed growth. Furthermore, there are about 245 thousand acres of national forest land upon which conservative cutting practices are followed. Paper company holdings amount to about 250 thousand acres. The total area of forest land in game club and similar holdings is not known, but in Georgetown County alone there are about 100 thousand acres of such land. Thus, it is seen that a significant part of the 4.5 million acres of forest land in the area is being carefully managed. Yet the entire growing stock--hardwood and softwood, saw timber and cordwood--is being overcut. This means that forest lands outside the national forests, paper company tracts, etc., are being exploited at a much heavier rate than over-all comparisons of growth and drain reveal. Much of this abused forest land belongs to farmers, and in counties where farm ownership predominates, these lands often are without sufficient merchantable volume to meet local needs. In this respect the situation appears most serious in Sumter, Lee, and Darlington Counties, although tight situations exist in other counties located in the central and western portions of this unit.

The loss in total pine growing stock, which was proportionately greater than the loss of saw-timber volume, is attributed mainly to the heavy cut of pulpwood. Since 1937 the area has furnished over 250 thousand cords per year, and in 1942 produced almost 500 thousand cords. This is a substantial jump from a 17-thousand cord production in 1936. Deficits in the total growing stock began in 1937 in spite of no great increase in lumber production in that year and in following years through 1941. Heavy cutting of under-sawlog-size material, such as pulpwood, is reflected in the years 1937 and 1939, when the total growing stock decreased and the saw-timber volume increased.

Southern coastal plain: Of the total amount of timber cut during the 8-year period, 22 percent, or 8.5 million cords, came from the southern coastal plain. About 53 percent of the material removed from the area was in the form of sawlogs, 17 percent was fuelwood, 16 percent pulpwood, and 5 percent veneer logs--these four items adding up to 91 percent of the total. The balance of the drain was principally for hewn ties and poles and piling.

In the case of pine, drain exceeded growth in five of the eight years, and the net effect was a fairly substantial loss in volume of growing stock, amounting to 5 percent of the saw timber, and 4 percent of the total stand (table 13). The main cause of the deficit in pine volume was in the quantity of timber removed as sawlogs and pulpwood, amounting to 58 and 22 percent, respectively, of the total pine drain for the period. In contrast to the situation in the pine, the hardwood volume substantially increased, involving a 6-percent gain in saw timber and a 13-percent addition to the total growing stock (table 14). A chief reason for the increase in hardwood seems to be in the small amount cut as fuelwood in this area. In eight years, only 0.7 million cords have been cut as compared with more than 2 million in each of the other units. Unfortunately, an increase in volume of hardwood growing stock in the sand hill section of the coastal plain is usually indicative of a loss in pine growing stock and its replacement by decidedly inferior species--the longleaf pine being replaced by scrub oak. However, in other sections of the southern coastal plain a gain in hardwood volume is not always disadvantageous as much of the increase involves desirable bottom-land hardwood timber.

A disturbing factor in an analysis of growth and drain in this area is the large acreage of forest which may never be cut or only lightly so. This includes land controlled by game clubs, private estates, and "yankee" plantation owners. In addition, there are fairly extensive paper company holdings within which conservative cutting practices prevail. All this puts a heavy strain on the growing stock of the remaining area, and results in serious forest depletion in certain localities.

Piedmont: A total of 11.3 million cords of wood were removed from the piedmont's forest growing stock during the period 1936 through 1943. Forty-seven percent of the volume cut was fuelwood, 40 percent sawlogs, 7 percent pulpwood, and 6 percent all other products (principally ties and miscellaneous items used on farms).

Because of an extensive area of young stands and the absence of widespread and heavy cutting during most of the period, a fairly substantial increase in the volume of growing stock has taken place. As of January 1, 1944, there were 4.6 billion board feet of pine and 1.8 billion of hardwood, representing an increase of about 10 percent in each species group. In total growing stock each major species group gained about 14 percent, with pine volume estimated at 21.7 million cords and hardwood at 11.4 million as of January 1, 1944.

In spite of the above indicated gain in growing stock, the recent great increase in pulpwood drain in the piedmont is disturbing. The 348 thousand cords of pulpwood cut in 1943 represented a 100-percent increase in the annual volume of wood cut for this purpose, and was the primary reason for the loss in pine growing stock that year. Furthermore, it should be remembered that the original forest in the piedmont was of mixed hardwood, chiefly oak and hickory, and some shortleaf pine. In the course of land settlement the hardwood forest gave way to cultivated fields. Poor cropping practices on the highly erosive soils resulted in much land abandonment. The idle fields furnished an ideal seed bed for the light-seeded pine, and soon were covered with these species. Hardwoods also came in later, and are prevalent in the understory. Thus, when the old-field pine stands of the piedmont are cut heavily, the succeeding stand is often predominately hardwood of low commercial value.

Another disturbing feature of the pulpwood operations in the piedmont is the apparent concentration of cutting activity in certain areas. Fairfield County is an example. In 1943 as many as six plants were drawing wood from this county. Indicative of the overcutting is information obtained from four of these plants, which revealed a drain of 117 thousand cords in that year, or 34 percent of the piedmont's total pulpwood cut. This is way out of proportion to the amount of sound-tree growing stock in

Fairfield, estimated at 9 percent of the volume in the piedmont. Newberry County also was heavily overcut. A partial tabulation of pulpwood volume removed showed a cut of over 62 thousand cords (18 percent of the piedmont's total) from a county containing only 6 percent of the growing stock.

CONCLUSIONS

As of January 1, 1944, the volume of sound, live trees growing within the forests of South Carolina totaled 29.7 billion board feet, or 126 million cords. Since January 1, 1936, this represents a loss of 1.4 percent in the quantity of saw timber, but a gain of 1.7 percent in the volume of all sound trees. Therefore, on the strength of these data it appears that the State's total forest inventory has suffered only slight changes in eight years, even though the amount of timber cut in three of these years was presumably large because of war demands.

However, a more detailed analysis reveals that the general situation is not as rosy as it seems. Under present rates of cutting, cypress will rapidly lose its status as a commercially important species. In eight years the volume of cypress saw timber has been reduced by about one-fifth, and there is insufficient second growth to provide a valuable stand in the future. Another fact worthy of serious consideration is that only under-sawlog-size hardwood substantially increased in volume during the 8-year period. This means that there is a definite trend toward a stand of young hardwood which, under present standards of utilization, would have little commercial value because of size.

Not to be overlooked are conditions within survey units. In the northern coastal plain the volume of hardwood saw timber, including cypress, was reduced 12 percent in the eight years. Even more serious was the fact that better species, like sweetgum and cypress, were cut heavier than the over-all figure reveals, while less desirable species, such as blackgum and certain oaks, may have actually increased in volume. Also, in the northern coastal plain the under-sawlog pine was being overcut at a faster rate than the saw timber. Thus, a serious future shortage of pine saw timber was in the making in that area. In the piedmont, the continued heavy cutting of pulpwood, such as occurred in two counties in 1943, will hasten conversion to a forest of low-quality hardwood in such areas.

The piedmont is the only area in which a definite improvement in the pine growing stock has taken place during the eight years, 1936 through 1943. However, in 1943 an increase in pulpwood drain, amounting to 220 thousand cords over 1942, brought about a reduction in pine growing stock, whereas substantial increases were effected in the previous seven years. This leads up to the point that major fluctuations in drain are chiefly due to changes in the amount of saw timber and pulpwood cut. The volume of fuelwood harvested each year ordinarily varies but little, and other items of drain are too small to be of great influence on the total growing stock. Obviously, any program designed to improve the quantity and quality of the growing stock greatly depends on participation by the lumber and pulpwood industries.

The 1936 forest inventory revealed that the average acre of saw timber in South Carolina contained 4,680 board feet, and in comparison with similar volumes in the other 12 southern states was the best stand in the South. As of July 1, 1944, it is estimated 37 thousand persons were employed in the woods and plant operations of the primary wood-using industries. Even excluding the small portable sawmills the volume of forest products manufactured in the State ranks second only to textiles. Consequently, it is unbelievable that the people as well as the forest industries of South Carolina can remain complacent on matters concerning the conditions of their forest resource. Even with the best average stand per acre of the South, over one-fourth of the saw-timber area was stocked with less than 2 thousand board feet per acre--an amount usually considered too small to operate economically. Furthermore, the trend is definitely toward more of such areas and a gradual conversion to immature stands of hardwood. Common sense tells that such trends do not result in stable employment and permanent forest industries and, consequently, are contrary to the welfare of South Carolina.

APPENDIX

Definition of Terms

Pine: Loblolly, longleaf, pitch, pond, shortleaf, slash, Virginia, and eastern white pines. Also eastern hemlock, eastern redcedar, and Atlantic white cedar.

Hardwood: Black, swamp and water tupelos, sweetgum, yellowpoplar, oaks, ash, maple, elm, hickory, cottonwood, sycamore, and associated minor species.

Cypress: Bald cypress (southern cypress) and pond cypress.

Pine types: Stands in which pine forms at least 25 percent of the dominant or codominant trees. Thus, the type ranges from pure pine stands to those in which up to 75 percent of the dominant and codominant trees are hardwood.

Hardwood types: Stands in which hardwood, cypress, or mixed hardwood and cypress form at least 75 percent of the dominant and codominant trees.

Saw-timber trees: Pine or cypress trees 9.0 inches or more in diameter, or hardwood trees 13.0 inches or more, with not less than one sound 12-foot butt log, or with 50 percent of the gross board-foot volume of the tree in usable sawlogs.

All sound trees: All saw-timber trees as described above and all sound, straight-stemmed trees from 5.0 inches d.b.h. to saw-timber size.

Board-foot volume: The volume by International ¼-inch rule, exclusive of defect, of that portion of sound saw-timber trees lying between stump and the upper limit of merchantability for sawlogs.

Volume in cords: The volume of wood and bark in standard cords, exclusive of defect, of that portion of trees 5.0 inches and larger in diameter lying between stump and a top of approximately 4 inches minimum diameter outside bark.

Growing stock: The volume of timber exclusive of cull trees and hardwood tops.

Mortality: The volume lost from the growing stock through the death of trees from causes such as fire, tree competition, disease, insect damage, and windthrow.

Net growth: The net increase (mortality deducted) in growing stock, before subtracting forest drain.

Forest drain: The reduction in growing stock due to cutting within the designated area.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1936

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	151,000	77,100	228,100	382,600	167,700	550,300
Veneer	1,500	16,300	17,800	3,400	34,000	37,400
Cooperage	5,700	400	6,100	12,700	900	13,600
Pulpwood	1,900	-	1,900	8,200	-	8,200
Other manufactures	200	2,600	2,800	500	9,600	10,100
Hewn crossties	6,800	4,100	10,900	20,600	9,100	29,700
Poles and piles	6,900	-	6,900	17,800	-	17,800
Fuelwood	26,300	28,000	54,300	83,600	62,000	145,600
Miscellaneous farm use	3,400	1,100	4,500	18,900	11,100	30,000
Total	203,700	129,600	333,300	548,300	294,400	842,700
Northern Coastal Plain:						
Lumber	303,100	103,300	406,400	753,900	235,300	989,200
Veneer	12,800	69,100	81,900	31,800	160,900	192,700
Cooperage	2,500	10,100	12,600	6,200	23,500	29,700
Pulpwood	400	900	1,300	7,300	9,700	17,000
Other manufactures	2,600	2,600	5,200	6,600	5,300	11,900
Hewn crossties	7,600	7,900	15,500	19,000	18,000	37,000
Poles and piles	16,800	-	16,800	41,700	-	41,700
Fuelwood	61,500	28,300	89,800	352,800	233,700	586,500
Miscellaneous farm use	3,900	1,100	5,000	29,800	9,000	38,800
Total	411,200	223,300	634,500	1,249,100	695,400	1,944,500
Piedmont:						
Lumber	147,300	5,500	152,800	435,800	14,100	449,900
Veneer	-	-	-	-	-	-
Cooperage	-	-	-	-	-	-
Pulpwood	3,200	100	3,300	20,300	3,100	23,400
Other manufactures	200	500	700	600	1,400	2,000
Hewn crossties	1,200	5,900	7,100	3,600	15,200	18,800
Poles and piles	4,300	-	4,300	12,800	-	12,800
Fuelwood	63,900	37,300	101,200	378,200	281,100	659,300
Miscellaneous farm use	4,600	1,400	6,000	36,000	10,800	46,800
Total	224,700	50,700	275,400	887,300	325,700	1,213,000
State of South Carolina:						
Lumber	601,400	185,900	787,300	1,572,300	417,100	1,989,400
Veneer	14,300	85,400	99,700	35,200	194,900	230,100
Cooperage	8,200	10,500	18,700	18,900	24,400	43,300
Pulpwood	5,500	1,000	6,500	35,800	12,800	48,600
Other manufactures	3,000	5,700	8,700	7,700	16,300	24,000
Hewn crossties	15,600	17,900	33,500	43,200	42,300	85,500
Poles and piles	28,000	-	28,000	72,300	-	72,300
Fuelwood	151,700	93,600	245,300	814,600	576,800	1,391,400
Miscellaneous farm use	11,900	3,600	15,500	84,700	30,900	115,600
Total	839,600	403,600	1,243,200	2,684,700	1,315,500	4,000,200

[1] Cedar and hemlock included with pines.
[2] Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1937

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	147,800	61,300	209,100	367,700	132,100	499,800
Veneer	2,100	21,900	24,000	5,200	47,900	53,100
Cooperage	5,400	200	5,600	13,300	400	13,700
Pulpwood	21,100	-	21,100	90,000	-	90,000
Other manufactures	-	2,500	2,500	-	5,600	5,600
Hewn crossties	11,700	3,700	15,400	29,100	8,000	37,100
Poles and piles	14,400	-	14,400	36,200	-	36,200
Fuelwood	23,500	21,500	45,000	87,900	102,400	190,300
Miscellaneous farm use	2,400	700	3,100	16,900	5,100	22,000
Total	228,400	111,800	340,200	646,300	301,500	947,800
Northern Coastal Plain:						
Lumber	264,800	127,400	392,200	658,800	287,600	946,400
Veneer	9,100	74,800	83,900	22,700	173,800	196,500
Cooperage	1,800	12,000	13,800	4,500	28,100	32,600
Pulpwood	58,600	1,900	60,500	242,100	10,600	252,700
Other manufactures	3,200	4,900	8,100	7,900	10,300	18,200
Hewn crossties	18,000	6,900	24,900	44,700	15,700	60,400
Poles and piles	15,100	100	15,200	37,600	200	37,800
Fuelwood	64,800	27,300	92,100	365,100	256,000	621,100
Miscellaneous farm use	4,000	1,100	5,100	29,800	9,000	38,800
Total	439,400	256,400	695,800	1,413,200	791,300	2,204,500
Piedmont:						
Lumber	112,000	6,100	118,100	331,300	15,700	347,000
Veneer	-	4,900	4,900	-	12,600	12,600
Cooperage	-	2,600	2,600	-	6,700	6,700
Pulpwood	5,000	700	5,700	32,300	18,700	51,000
Other manufactures	300	700	1,000	800	2,100	2,900
Hewn crossties	1,400	6,200	7,600	4,000	16,000	20,000
Poles and piles	3,800	-	3,800	11,400	-	11,400
Fuelwood	63,900	37,300	101,200	378,200	281,100	659,300
Miscellaneous farm use	4,600	1,400	6,000	36,000	10,800	46,800
Total	191,000	59,900	250,900	794,000	363,700	1,157,700
State of South Carolina:						
Lumber	524,600	194,800	719,400	1,357,800	435,400	1,793,200
Veneer	11,200	101,600	112,800	27,900	234,300	262,200
Cooperage	7,200	14,800	22,000	17,800	35,200	53,000
Pulpwood	84,700	2,600	87,300	364,400	29,300	393,700
Other manufactures	3,500	8,100	11,600	8,700	18,000	26,700
Hewn crossties	31,100	16,800	47,900	77,800	39,700	117,500
Poles and piles	33,300	100	33,400	85,200	200	85,400
Fuelwood	152,200	86,100	238,300	831,200	639,500	1,470,700
Miscellaneous farm use	11,000	3,200	14,200	82,700	24,900	107,600
Total	858,800	428,100	1,286,900	2,853,500	1,456,500	4,310,000

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[1] Cedar and hemlock included with pines.
[2] Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1938

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	132,900	41,600	174,500	330,600	89,600	420,200
Veneer	1,600	20,100	21,700	3,900	44,100	48,000
Cooperage	4,700	200	4,900	11,800	400	12,200
Pulpwood	23,500	100	23,600	87,500	300	87,800
Other manufactures	-	3,500	3,500	-	7,700	7,700
Hewn crossties	11,200	7,600	18,800	27,800	16,500	44,300
Poles and piles	7,900	-	7,900	20,100	-	20,100
Fuelwood	23,500	21,500	45,000	87,900	102,400	190,300
Miscellaneous farm use	2,400	700	3,100	16,900	5,100	22,000
Total	207,700	95,300	303,000	586,500	266,100	852,600
Northern Coastal Plain:						
Lumber	208,500	131,600	340,100	518,500	295,200	813,700
Veneer	8,100	65,200	73,300	20,100	151,500	171,600
Cooperage	1,800	6,900	8,700	4,500	16,100	20,600
Pulpwood	72,000	1,500	73,500	250,500	7,800	258,300
Other manufactures	2,400	4,400	6,800	6,000	9,200	15,200
Hewn crossties	17,200	9,900	27,100	42,800	22,900	65,700
Poles and piles	8,500	200	8,700	21,100	300	21,400
Fuelwood	64,700	27,300	92,000	364,100	254,200	618,300
Miscellaneous farm use	4,000	1,100	5,100	29,800	9,000	38,800
Total	387,200	248,100	635,300	1,257,400	766,200	2,023,600
Piedmont:						
Lumber	101,300	8,000	109,300	299,600	20,600	320,200
Veneer	-	3,700	3,700	-	9,500	9,500
Cooperage	-	1,000	1,000	-	2,700	2,700
Pulpwood	5,600	1,000	6,600	24,700	13,500	38,200
Other manufactures	200	400	600	700	1,400	2,100
Hewn crossties	700	4,200	4,900	1,900	10,800	12,700
Poles and piles	2,200	-	2,200	6,500	-	6,500
Fuelwood	63,900	37,300	101,200	378,200	281,100	659,300
Miscellaneous farm use	4,600	1,400	6,000	36,000	10,800	46,800
Total	178,500	57,000	235,500	747,600	350,400	1,098,000
State of South Carolina:						
Lumber	442,700	181,200	623,900	1,148,700	405,400	1,554,100
Veneer	9,700	89,000	98,700	24,000	205,100	229,100
Cooperage	6,500	8,100	14,600	16,300	19,200	35,500
Pulpwood	101,100	2,600	103,700	362,700	21,600	384,300
Other manufactures	2,600	8,300	10,900	6,700	18,300	25,000
Hewn crossties	29,100	21,700	50,800	72,500	50,200	122,700
Poles and piles	18,600	200	18,800	47,700	300	48,000
Fuelwood	152,100	86,100	238,200	830,200	637,700	1,467,900
Miscellaneous farm use	11,000	3,200	14,200	82,700	24,900	107,600
Total	773,400	400,400	1,173,800	2,591,500	1,382,700	3,974,200

1/Cedar and hemlock included with pines.
2/Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1939

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	160,100	56,600	216,700	398,300	119,900	518,200
Veneer	2,400	19,800	22,200	6,000	43,100	49,100
Cooperage	4,600	200	4,800	11,900	300	12,200
Pulpwood	36,700	-	36,700	121,400	-	121,400
Other manufactures	200	2,100	2,300	600	4,800	5,400
Hewn crossties	2,500	4,600	7,100	6,100	9,900	16,000
Poles and piles	8,800	-	8,800	23,500	-	23,500
Fuelwood	23,600	21,400	45,000	87,700	101,400	189,100
Miscellaneous farm use	2,000	600	2,600	14,200	4,300	18,500
Total	240,900	105,300	346,200	669,700	283,700	953,400
Northern Coastal Plain:						
Lumber	245,900	131,500	377,400	611,600	290,900	902,500
Veneer	4,100	52,100	56,200	10,100	121,200	131,300
Cooperage	700	7,300	8,000	1,700	17,100	18,800
Pulpwood	106,900	3,900	110,800	359,000	11,600	370,600
Other manufactures	1,500	4,900	6,400	4,500	11,000	15,500
Hewn crossties	2,100	5,400	7,500	5,400	11,600	17,000
Poles and piles	19,200	100	19,300	54,200	100	54,300
Fuelwood	72,900	29,900	102,800	413,100	296,500	709,600
Miscellaneous farm use	3,700	1,000	4,700	27,100	8,100	35,200
Total	457,000	236,100	693,100	1,486,700	768,100	2,254,800
Piedmont:						
Lumber	160,800	11,000	171,800	475,700	28,200	503,900
Veneer	500	4,900	5,400	1,500	12,600	14,100
Cooperage	-	-	-	-	-	-
Pulpwood	13,000	1,100	14,100	53,200	5,400	58,600
Other manufactures	400	200	600	1,600	1,100	2,700
Hewn crossties	1,400	2,200	3,600	4,300	5,600	9,900
Poles and piles	1,700	-	1,700	5,100	-	5,100
Fuelwood	68,300	37,700	106,000	395,700	287,300	683,000
Miscellaneous farm use	3,900	1,100	5,000	30,200	9,100	39,300
Total	250,000	58,200	308,200	967,300	349,300	1,316,600
State of South Carolina:						
Lumber	566,800	199,100	765,900	1,485,600	439,000	1,924,600
Veneer	7,000	76,800	83,800	17,600	176,900	194,500
Cooperage	5,300	7,500	12,800	13,600	17,400	31,000
Pulpwood	156,600	5,000	161,600	533,600	17,000	550,600
Other manufactures	2,100	7,200	9,300	6,700	16,900	23,600
Hewn crossties	6,000	12,200	18,200	15,800	27,100	42,900
Poles and piles	29,700	100	29,800	82,800	100	82,900
Fuelwood	164,800	89,000	253,800	896,500	685,200	1,581,700
Miscellaneous farm use	9,600	2,700	12,300	71,500	21,500	93,000
Total	947,900	399,600	1,347,500	3,123,700	1,401,100	4,524,800

[1] Cedar and hemlock included with pines.
[2] Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1940

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	175,700	52,000	227,700	437,100	111,500	548,600
Veneer	2,500	18,500	21,000	6,100	40,400	46,500
Cooperage	5,100	200	5,300	13,300	400	13,700
Pulpwood	48,800	200	49,000	158,700	1,000	159,700
Other manufactures	100	3,600	3,700	600	7,900	8,500
Hewn crossties	3,200	6,600	9,800	8,000	13,900	21,900
Poles and piles	9,900	-	9,900	25,700	-	25,700
Fuelwood	23,600	21,400	45,000	87,800	101,300	189,100
Miscellaneous farm use	2,000	500	2,500	13,500	4,100	17,600
Total	270,900	103,000	373,900	750,800	280,500	1,031,300
Northern Coastal Plain:						
Lumber	252,500	170,000	422,500	628,200	378,900	1,007,100
Veneer	4,000	56,400	60,400	10,100	132,200	142,300
Cooperage	700	9,200	9,900	1,700	21,500	23,200
Pulpwood	118,800	4,300	123,100	399,200	14,200	413,400
Other manufactures	1,600	5,300	6,900	4,500	11,900	16,400
Hewn crossties	4,900	5,700	10,600	12,100	12,800	24,900
Poles and piles	18,500	-	18,500	51,700	-	51,700
Fuelwood	72,400	29,700	102,100	399,200	266,200	665,400
Miscellaneous farm use	3,600	1,000	4,600	26,500	7,900	34,400
Total	477,000	281,600	758,600	1,533,200	845,600	2,378,800
Piedmont:						
Lumber	202,500	22,200	224,700	599,100	56,800	655,900
Veneer	600	5,500	6,100	1,800	14,000	15,800
Cooperage	-	-	-	-	-	-
Pulpwood	11,000	3,800	14,800	44,900	52,300	97,200
Other manufactures	400	200	600	1,700	1,200	2,900
Hewn crossties	3,100	2,900	6,000	9,200	7,400	16,600
Poles and piles	1,800	-	1,800	5,400	-	5,400
Fuelwood	68,800	37,800	106,600	397,700	288,300	686,000
Miscellaneous farm use	3,700	1,000	4,700	28,800	8,600	37,400
Total	291,900	73,400	365,300	1,088,600	428,600	1,517,200
State of South Carolina:						
Lumber	630,700	244,200	874,900	1,664,400	547,200	2,211,600
Veneer	7,100	80,400	87,500	18,000	186,600	204,600
Cooperage	5,800	9,400	15,200	15,000	21,900	36,900
Pulpwood	178,600	8,300	186,900	602,800	67,500	670,300
Other manufactures	2,100	9,100	11,200	6,800	21,000	27,800
Hewn crossties	11,200	15,200	26,400	29,300	34,100	63,400
Poles and piles	30,200	-	30,200	82,800	-	82,800
Fuelwood	164,800	88,900	253,700	884,700	655,800	1,540,500
Miscellaneous farm use	9,300	2,500	11,800	68,800	20,600	89,400
Total	1,039,800	458,000	1,497,800	3,372,600	1,554,700	4,927,300

[1] Cedar and hemlock included with pines.
[2] Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1941

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	222,500	42,700	265,200	553,500	89,600	643,100
Veneer	2,900	21,800	24,700	7,100	47,800	54,900
Cooperage	5,500	200	5,700	13,700	500	14,200
Pulpwood	85,100	300	85,400	277,000	2,000	279,000
Other manufactures	100	4,100	4,200	200	9,700	9,900
Hewn crossties	2,300	4,800	7,100	5,800	10,200	16,000
Poles and piles	9,500	-	9,500	24,700	-	24,700
Fuelwood	23,600	21,400	45,000	87,800	101,300	189,100
Miscellaneous farm use	2,000	500	2,500	13,500	4,100	17,600
Total	353,500	95,800	449,300	983,300	265,200	1,248,500
Northern Coastal Plain:						
Lumber	357,900	220,300	578,200	890,300	489,900	1,380,200
Veneer	4,700	66,600	71,300	11,800	156,100	167,900
Cooperage	1,000	14,800	15,800	2,500	34,700	37,200
Pulpwood	111,300	9,300	120,600	376,000	32,200	408,200
Other manufactures	1,200	5,100	6,300	2,900	12,000	14,900
Hewn crossties	3,600	4,100	7,700	8,900	9,300	18,200
Poles and piles	17,700	-	17,700	49,500	-	49,500
Fuelwood	72,400	29,700	102,100	399,200	266,200	665,400
Miscellaneous farm use	3,600	1,000	4,600	26,500	7,900	34,400
Total	573,400	350,900	924,300	1,767,600	1,008,300	2,775,900
Piedmont:						
Lumber	221,800	34,500	256,300	656,100	88,500	744,600
Veneer	700	6,400	7,100	2,100	16,500	18,600
Cooperage	-	-	-	-	-	-
Pulpwood	19,300	4,500	23,800	74,000	36,700	110,700
Other manufactures	300	300	600	1,400	1,400	2,800
Hewn crossties	2,300	2,100	4,400	6,700	5,400	12,100
Poles and piles	1,700	-	1,700	5,200	-	5,200
Fuelwood	68,800	37,800	106,600	397,700	288,300	686,000
Miscellaneous farm use	3,700	1,000	4,700	28,800	8,600	37,400
Total	318,600	86,600	405,200	1,172,000	445,400	1,617,400
State of South Carolina:						
Lumber	802,200	297,500	1,099,700	2,099,900	668,000	2,767,900
Veneer	8,300	94,800	103,100	21,000	220,400	241,400
Cooperage	6,500	15,000	21,500	16,200	35,200	51,400
Pulpwood	215,700	14,100	229,800	727,000	70,900	797,900
Other manufactures	1,600	9,500	11,100	4,500	23,100	27,600
Hewn crossties	8,200	11,000	19,200	21,400	24,900	46,300
Poles and piles	28,900	-	28,900	79,400	-	79,400
Fuelwood	164,800	88,900	253,700	884,700	655,800	1,540,500
Miscellaneous farm use	9,300	2,500	11,800	68,800	20,600	89,400
Total	1,245,500	533,300	1,778,800	3,922,900	1,718,900	5,641,800

[1] Cedar and hemlock included with pines.
[2] Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1942

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	230,600	47,600	278,200	573,700	101,200	674,900
Veneer	2,100	24,600	26,700	5,200	53,900	59,100
Cooperage	5,000	200	5,200	12,500	400	12,900
Pulpwood	102,200	400	102,600	332,300	2,800	335,100
Other manufactures	200	3,900	4,100	600	9,300	9,900
Hewn crossties	3,100	6,400	9,500	7,700	13,500	21,200
Poles and piles	12,300	-	12,300	32,200	-	32,200
Fuelwood	21,800	19,600	41,400	80,800	93,000	173,800
Miscellaneous farm use	2,000	500	2,500	13,500	4,100	17,600
Total	379,300	103,200	482,500	1,058,500	278,200	1,336,700
Northern Coastal Plain:						
Lumber	365,600	176,400	542,000	909,300	392,700	1,302,000
Veneer	4,400	59,700	64,100	10,900	140,100	151,000
Cooperage	1,200	14,900	16,100	3,100	34,700	37,800
Pulpwood	138,500	3,900	142,400	467,100	16,000	483,100
Other manufactures	900	4,600	5,500	2,200	11,100	13,300
Hewn crossties	4,700	5,600	10,300	11,800	12,400	24,200
Poles and piles	23,100	-	23,100	64,600	-	64,600
Fuelwood	66,900	27,400	94,300	372,000	253,600	625,600
Miscellaneous farm use	3,600	1,000	4,600	26,500	7,900	34,400
Total	608,900	293,500	902,400	1,867,500	868,500	2,736,000
Piedmont:						
Lumber	228,400	29,400	257,800	675,600	75,500	751,100
Veneer	600	5,200	5,800	1,800	13,200	15,000
Cooperage	-	-	-	-	-	-
Pulpwood	24,200	4,300	28,500	92,500	35,400	127,900
Other manufactures	400	500	900	2,100	2,200	4,300
Hewn crossties	3,000	2,800	5,800	8,900	7,200	16,100
Poles and piles	2,300	-	2,300	6,700	-	6,700
Fuelwood	63,500	34,600	98,100	367,000	265,100	632,100
Miscellaneous farm use	3,700	1,100	4,800	28,800	8,600	37,400
Total	326,100	77,900	404,000	1,183,400	407,200	1,590,600
State of South Carolina:						
Lumber	824,600	253,400	1,078,000	2,158,600	569,400	2,728,000
Veneer	7,100	89,500	96,600	17,900	207,200	225,100
Cooperage	6,200	15,100	21,300	15,600	35,100	50,700
Pulpwood	264,900	8,600	273,500	891,900	54,200	946,100
Other manufactures	1,500	9,000	10,500	4,900	22,600	27,500
Hewn crossties	10,800	14,800	25,600	28,400	33,100	61,500
Poles and piles	37,700	-	37,700	103,500	-	103,500
Fuelwood	152,200	81,600	233,800	819,800	611,700	1,431,500
Miscellaneous farm use	9,300	2,600	11,900	68,800	20,600	89,400
Total	1,314,300	474,600	1,788,900	4,109,400	1,553,900	5,663,300

[1] Cedar and hemlock included with pines.
[2] Cypress included with hardwoods.

FOREST DRAIN BY SURVEY UNIT, COMMODITY, AND SPECIES GROUP, SOUTH CAROLINA--1943

Survey unit and commodity	Saw timber			All sound trees - 5.0" d.b.h. and larger		
	Pines[1]	Hardwoods[2]	All species	Pines[1]	Hardwoods[2]	All species
	M bd. ft.	M bd. ft.	M bd. ft.	Cords	Cords	Cords
Southern Coastal Plain:						
Lumber	218,800	42,700	261,500	544,300	90,500	634,800
Veneer	200	30,400	30,600	500	66,600	67,100
Cooperage	4,900	100	5,000	12,100	300	12,400
Pulpwood	85,100	2,500	87,600	277,900	8,500	286,400
Other manufactures	300	3,600	3,900	800	8,700	9,500
Hewn crossties	10,400	2,400	12,800	26,000	5,000	31,000
Poles and piles	8,500	-	8,500	22,100	-	22,100
Fuelwood	21,800	19,600	41,400	80,800	93,000	173,800
Miscellaneous farm use	2,000	500	2,500	13,500	4,100	17,600
Total	352,000	101,800	453,800	978,000	276,700	1,254,700
Northern Coastal Plain:						
Lumber	349,000	129,500	478,500	868,000	288,000	1,156,000
Veneer	2,100	61,800	63,900	5,300	145,000	150,300
Cooperage	1,500	11,100	12,600	3,700	25,900	29,600
Pulpwood	97,900	2,600	100,500	329,700	10,500	340,200
Other manufactures	1,200	4,300	5,500	3,000	10,800	13,800
Hewn crossties	8,900	1,900	10,800	22,300	4,200	26,500
Poles and piles	15,900	-	15,900	44,500	-	44,500
Fuelwood	66,900	27,400	94,300	372,000	253,600	625,600
Miscellaneous farm use	3,600	1,000	4,600	26,500	7,900	34,400
Total	547,000	239,600	786,600	1,675,000	745,900	2,420,900
Piedmont:						
Lumber	221,400	22,000	243,400	654,900	56,400	711,300
Veneer	-	5,900	5,900	-	15,100	15,100
Cooperage	-	-	-	-	-	-
Pulpwood	87,400	2,700	90,100	328,400	19,800	348,200
Other manufactures	400	500	900	1,800	2,400	4,200
Hewn crossties	2,000	5,100	7,100	6,000	13,000	19,000
Poles and piles	1,500	-	1,500	4,700	-	4,700
Fuelwood	63,500	34,600	98,100	367,000	265,100	632,100
Miscellaneous farm use	3,700	1,100	4,800	28,800	8,600	37,400
Total	379,900	71,900	451,800	1,391,600	380,400	1,772,000
State of South Carolina:						
Lumber	789,200	194,200	983,400	2,067,200	434,900	2,502,100
Veneer	2,300	98,100	100,400	5,800	226,700	232,500
Cooperage	6,400	11,200	17,600	15,800	26,200	42,000
Pulpwood	270,400	7,800	278,200	936,000	38,800	974,800
Other manufactures	1,900	8,400	10,300	5,600	21,900	27,500
Hewn crossties	21,300	9,400	30,700	54,300	22,200	76,500
Poles and piles	25,900	-	25,900	71,300	-	71,300
Fuelwood	152,200	81,600	233,800	819,800	611,700	1,431,500
Miscellaneous farm use	9,300	2,600	11,900	68,800	20,600	89,400
Total	1,278,900	413,300	1,692,200	4,044,600	1,403,000	5,447,600

[1] Cedar and hemlock included with pines.
[2] Cypress included with hardwoods.

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1936

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1936	1	5,817	476	3,188	9,481	19,534	1,659	17,892	39,085
	2	8,471	905	5,425	14,801	27,641	2,513	25,687	55,841
	3	4,143	-	1,692	5,835	19,031	-	9,995	29,026
	State	18,431	1,381	10,305	30,117	66,206	4,172	53,574	123,952
Growth	1	317	13	155	485	961	35	805	1,801
	2	531	19	236	786	1,556	45	1,049	2,650
	3	356	-	100	456	1,587	-	655	2,242
	State	1,204	32	491	1,727	4,104	80	2,509	6,693
Mortality	1	125	2	39	166	440	15	277	732
	2	67	4	59	130	231	21	335	587
	3	37	-	14	51	218	-	97	315
	State	229	6	112	347	889	36	709	1,634
Net growth	1	192	11	116	319	521	20	528	1,069
	2	464	15	177	656	1,325	24	714	2,063
	3	319	-	86	405	1,369	-	558	1,927
	State	975	26	379	1,380	3,215	44	1,800	5,059
Commodity drain	1	204	17	112	333	548	34	261	843
	2	411	23	201	635	1,249	44	651	1,944
	3	225	-	51	276	887	-	326	1,213
	State	840	40	364	1,244	2,684	78	1,238	4,000
Net change	1	-12	-6	+4	-14	-27	-14	+267	+226
	2	+53	-8	-24	+21	+76	-20	+63	+119
	3	+94	-	+35	+129	+482	-	+232	+714
	State	+135	-14	+15	+136	+531	-34	+562	+1,059
Growing stock, Jan. 1, 1937	1	5,805	470	3,192	9,467	19,507	1,645	18,159	39,311
	2	8,524	897	5,401	14,822	27,717	2,493	25,750	55,960
	3	4,237	-	1,727	5,964	19,513	-	10,227	29,740
	State	18,566	1,367	10,320	30,253	66,737	4,138	54,136	125,011

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1937

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1937	1	5,805	470	3,192	9,467	19,507	1,645	18,159	39,311
	2	8,524	897	5,401	14,822	27,717	2,493	25,750	55,960
	3	4,237	-	1,727	5,964	19,513	-	10,227	29,740
	State	18,566	1,367	10,320	30,253	66,737	4,138	54,136	125,011
Growth	1	330	13	157	500	978	36	848	1,862
	2	533	17	233	783	1,531	40	1,026	2,597
	3	356	-	101	457	1,572	-	659	2,231
	State	1,219	30	491	1,740	4,081	76	2,533	6,690
Mortality	1	75	2	38	115	263	16	269	548
	2	67	4	59	130	233	20	335	588
	3	37	-	15	52	222	-	98	320
	State	179	6	112	297	718	36	702	1,456
Net growth	1	255	11	119	385	715	20	579	1,314
	2	466	13	174	653	1,298	20	691	2,009
	3	319	-	86	405	1,350	-	561	1,911
	State	1,040	24	379	1,443	3,363	40	1,831	5,234
Commodity drain	1	228	11	101	340	646	21	281	948
	2	440	34	222	696	1,413	66	725	2,204
	3	191	-	60	251	794	-	364	1,158
	State	859	45	383	1,287	2,853	87	1,370	4,310
Net change	1	+27	-	+18	+45	+69	-1	+298	+366
	2	+26	-21	-48	-43	-115	-46	-34	-195
	3	+128	-	+26	+154	+556	-	+197	+753
	State	+181	-21	-4	+156	+510	-47	+461	+924
Growing stock, Jan. 1, 1938	1	5,832	470	3,210	9,512	19,576	1,644	18,457	39,677
	2	8,550	876	5,353	14,779	27,602	2,447	25,716	55,765
	3	4,365	-	1,753	6,118	20,069	-	10,424	30,493
	State	18,747	1,346	10,316	30,409	67,247	4,091	54,597	125,935

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1938

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1938	1	5,832	470	3,210	9,512	19,576	1,644	18,457	39,677
	2	8,550	876	5,353	14,779	27,602	2,447	25,716	55,765
	3	4,365	-	1,753	6,118	20,069	-	10,424	30,493
	State	18,747	1,346	10,316	30,409	67,247	4,091	54,597	125,935
Growth	1	332	13	158	503	984	35	859	1,878
	2	536	18	232	786	1,506	39	1,011	2,556
	3	362	-	101	463	1,575	-	640	2,215
	State	1,230	31	491	1,752	4,065	74	2,510	6,649
Mortality	1	75	2	38	115	264	16	273	553
	2	68	4	59	131	232	20	334	586
	3	38	-	15	53	229	-	100	329
	State	181	6	112	299	725	36	707	1,468
Net growth	1	257	11	120	388	720	19	586	1,325
	2	468	14	173	655	1,274	19	677	1,970
	3	324	-	86	410	1,346	-	540	1,886
	State	1,049	25	379	1,453	3,340	38	1,803	5,181
Commodity drain	1	208	8	87	303	587	15	251	853
	2	387	40	208	635	1,257	77	689	2,023
	3	178	-	57	235	748	-	350	1,098
	State	773	48	352	1,173	2,592	92	1,290	3,974
Net change	1	+49	+3	+33	+85	+133	+4	+335	+472
	2	+81	-26	-35	+20	+17	-58	-12	-53
	3	+146	-	+29	+175	+598	-	+190	+788
	State	+276	-23	+27	+280	+748	-54	+513	+1,207
Growing stock, Jan. 1, 1939	1	5,881	473	3,243	9,597	19,709	1,648	18,792	40,149
	2	8,631	850	5,318	14,799	27,619	2,389	25,704	55,712
	3	4,511	-	1,782	6,293	20,667	-	10,614	31,281
	State	19,023	1,323	10,343	30,689	67,995	4,037	55,110	127,142

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1939

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1939	1	5,881	473	3,243	9,597	19,709	1,648	18,792	40,149
	2	8,631	850	5,318	14,799	27,619	2,389	25,704	55,712
	3	4,511	-	1,782	6,293	20,667	-	10,614	31,281
	State	19,023	1,323	10,343	30,689	67,995	4,037	55,110	127,142
Growth	1	333	12	159	504	987	34	869	1,890
	2	537	18	231	786	1,504	38	1,013	2,555
	3	366	-	101	467	1,592	-	649	2,241
	State	1,236	30	491	1,757	4,083	72	2,531	6,686
Mortality	1	76	2	39	117	266	16	278	560
	2	68	4	58	130	232	20	334	586
	3	40	-	15	55	236	-	102	338
	State	184	6	112	302	734	36	714	1,484
Net growth	1	257	10	120	387	721	18	591	1,330
	2	469	14	173	656	1,272	18	679	1,969
	3	326	-	86	412	1,356	-	547	1,903
	State	1,052	24	379	1,455	3,349	36	1,817	5,202
Commodity drain	1	241	18	87	346	670	34	249	953
	2	457	45	191	693	1,487	86	682	2,255
	3	250	-	58	308	967	-	350	1,317
	State	948	63	336	1,347	3,124	120	1,281	4,525
Net change	1	+16	-8	+33	+41	+51	-16	+342	+377
	2	+12	-31	-18	-37	-215	-68	-3	-286
	3	+76	-	+28	+104	+389	-	+197	+586
	State	+104	-39	+43	+108	+225	-84	+536	+677
Growing stock, Jan. 1, 1940	1	5,897	465	3,276	9,638	19,760	1,632	19,134	40,526
	2	8,643	819	5,300	14,762	27,404	2,321	25,701	55,426
	3	4,587	-	1,810	6,397	21,056	-	10,811	31,867
	State	19,127	1,284	10,386	30,797	68,220	3,953	55,646	127,819

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1940

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1940	1	5,897	465	3,276	9,638	19,760	1,632	19,134	40,526
	2	8,643	819	5,300	14,762	27,404	2,321	25,701	55,426
	3	4,587	-	1,810	6,397	21,056	-	10,811	31,867
	State	19,127	1,284	10,386	30,797	68,220	3,953	55,646	127,819
Growth	1	333	13	160	506	987	34	879	1,900
	2	536	17	229	782	1,491	36	1,007	2,534
	3	368	-	101	469	1,603	-	652	2,255
	State	1,237	30	490	1,757	4,081	70	2,538	6,689
Mortality	1	76	2	39	117	267	16	283	566
	2	68	4	58	130	230	19	334	583
	3	40	-	15	55	240	-	104	344
	State	184	6	112	302	737	35	721	1,493
Net growth	1	257	11	121	389	720	18	596	1,334
	2	468	13	171	652	1,261	17	673	1,951
	3	328	-	86	414	1,363	-	548	1,911
	State	1,053	24	378	1,455	3,344	35	1,817	5,196
Commodity drain	1	271	12	91	374	751	22	258	1,031
	2	477	49	232	758	1,533	94	752	2,379
	3	292	-	73	365	1,089	-	428	1,517
	State	1,040	61	396	1,497	3,373	116	1,438	4,927
Net change	1	-14	-1	+30	+15	-31	-4	+338	+303
	2	-9	-36	-61	-106	-272	-77	-79	-428
	3	+36	-	+13	+49	+274	-	+120	+394
	State	+13	-37	-18	-42	-29	-81	+379	+269
Growing stock, Jan. 1, 1941	1	5,883	464	3,306	9,653	19,729	1,628	19,472	40,829
	2	8,634	783	5,239	14,656	27,132	2,244	25,622	54,998
	3	4,623	-	1,823	6,446	21,330	-	10,931	32,261
	State	19,140	1,247	10,368	30,755	68,191	3,872	56,025	128,088

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1941

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1941	1	5,883	464	3,306	9,653	19,729	1,628	19,472	40,829
	2	8,634	783	5,239	14,656	27,132	2,244	25,622	54,998
	3	4,623	-	1,823	6,446	21,330	-	10,931	32,261
	State	19,140	1,247	10,368	30,755	68,191	3,872	56,025	128,088
Growth	1	330	13	161	504	980	35	890	1,905
	2	534	17	227	778	1,465	33	999	2,497
	3	368	-	101	469	1,613	-	656	2,269
	State	1,232	30	489	1,751	4,058	68	2,545	6,671
Mortality	1	76	2	39	117	266	16	288	570
	2	68	4	58	130	228	18	333	579
	3	41	-	15	56	243	-	105	348
	State	185	6	112	303	737	34	726	1,497
Net growth	1	254	11	122	387	714	19	602	1,335
	2	466	13	169	648	1,237	15	666	1,918
	3	327	-	86	413	1,370	-	551	1,921
	State	1,047	24	377	1,448	3,321	34	1,819	5,174
Commodity drain	1	354	16	80	450	983	31	234	1,248
	2	573	65	286	924	1,768	125	883	2,776
	3	319	-	86	405	1,172	-	446	1,618
	State	1,246	81	452	1,779	3,923	156	1,563	5,642
Net change	1	-100	-5	+42	-63	-269	-12	+368	+87
	2	-107	-52	-117	-276	-531	-110	-217	-858
	3	+8	-	-	+8	+198	-	+105	+303
	State	-199	-57	-75	-331	-602	-122	+256	-468
Growing stock, Jan. 1, 1942	1	5,783	459	3,348	9,590	19,460	1,616	19,840	40,916
	2	8,527	731	5,122	14,380	26,601	2,134	25,405	54,140
	3	4,631	-	1,823	6,454	21,528	-	11,036	32,564
	State	18,941	1,190	10,293	30,424	67,589	3,750	56,281	127,620

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1942

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1942	1	5,783	459	3,348	9,590	19,460	1,616	19,840	40,916
	2	8,527	731	5,122	14,380	26,601	2,134	25,405	54,140
	3	4,631	-	1,823	6,454	21,528	-	11,036	32,564
	State	18,941	1,190	10,293	30,424	67,589	3,750	56,281	127,620
Growth	1	325	13	162	500	966	35	900	1,901
	2	526	15	222	763	1,428	32	975	2,435
	3	368	-	102	470	1,620	-	661	2,281
	State	1,219	28	486	1,733	4,014	67	2,536	6,617
Mortality[1]	1	75	3	40	118	263	16	293	572
	2	82	8	130	220	349	61	922	1,332
	3	41	-	15	56	245	-	106	351
	State	198	11	185	394	857	77	1,321	2,255
Net growth	1	250	10	122	382	703	19	607	1,329
	2	444	7	92	543	1,079	-29	53	1,103
	3	327	-	87	414	1,375	-	555	1,930
	State	1,021	17	301	1,339	3,157	-10	1,215	4,362
Commodity drain	1	379	13	90	482	1,058	26	253	1,337
	2	609	52	242	903	1,868	99	769	2,736
	3	326	-	78	404	1,183	-	407	1,590
	State	1,314	65	410	1,789	4,109	125	1,429	5,663
Net change	1	-129	-3	+32	-100	-355	-7	+354	-8
	2	-165	-45	-150	-360	-789	-128	-716	-1,633
	3	+1	-	+9	+10	+192	-	+148	+340
	State	-293	-48	-109	-450	-952	-135	-214	-1,301
Growing stock, Jan. 1, 1943	1	5,654	456	3,380	9,490	19,105	1,609	20,194	40,908
	2	8,362	686	4,972	14,020	25,812	2,006	24,689	52,507
	3	4,632	-	1,832	6,464	21,720	-	11,184	32,904
	State	18,648	1,142	10,184	29,974	66,637	3,615	56,067	126,319

[1] Mortality in Unit 2 includes the volume of timber destroyed as a result of the flooding of the Santee-Cooper reservoirs.

COMPARISON OF FOREST GROWTH AND DRAIN, SOUTH CAROLINA--1943

Item	Survey unit	Saw timber				All sound trees - 5.0" d.b.h. and larger			
		Pines	Cypress	Hardwoods	Total	Pines	Cypress	Hardwoods	Total
		Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	M cords	M cords	M cords	M cords
Growing stock, Jan. 1, 1943	1	5,654	456	3,380	9,490	19,105	1,609	20,194	40,908
	2	8,362	686	4,972	14,020	25,812	2,006	24,689	52,507
	3	4,632	-	1,832	6,464	21,720	-	11,184	32,904
	State	18,648	1,142	10,184	29,974	66,637	3,615	56,067	126,319
Growth	1	320	13	163	496	954	35	910	1,899
	2	522	15	222	759	1,408	32	983	2,423
	3	366	-	102	468	1,623	-	667	2,290
	State	1,208	28	487	1,723	3,985	67	2,560	6,612
Mortality	1	73	3	40	116	258	16	299	573
	2	66	3	55	124	217	16	321	554
	3	40	-	15	55	247	-	107	354
	State	179	6	110	295	722	32	727	1,481
Net growth	1	247	10	123	380	696	19	611	1,326
	2	456	12	167	635	1,191	16	662	1,869
	3	326	-	87	413	1,376	-	560	1,936
	State	1,029	22	377	1,428	3,263	35	1,833	5,131
Commodity drain	1	352	12	90	454	978	23	254	1,255
	2	547	37	202	786	1,675	71	675	2,421
	3	380	-	72	452	1,392	-	380	1,772
	State	1,279	49	364	1,692	4,045	94	1,309	5,448
Net change	1	-105	-2	+33	-74	-282	-4	+357	+71
	2	-91	-25	-35	-151	-484	-55	-13	-552
	3	-54	-	+15	-39	-16	-	+180	+164
	State	-250	-27	+13	-264	-782	-59	+524	-317
Growing stock, Jan. 1, 1944	1	5,549	454	3,413	9,416	18,823	1,605	20,551	40,979
	2	8,271	661	4,937	13,869	25,328	1,951	24,676	51,955
	3	4,578	-	1,847	6,425	21,704	-	11,364	33,068
	State	18,398	1,115	10,197	29,710	65,855	3,556	56,591	126,002

Forest Survey Reports
published by
Appalachian Forest Experiment Station

Forest Survey Releases

No. 1 - Forest Resources of the Northern Coastal Plain of South Carolina.
July 15, 1939

No. 2 - Forest Resources of the Piedmont Region of South Carolina.
September 1, 1939

No. 3 - Forest Resources of the Southern Coastal Plain of South Carolina.
December 1, 1939

No. 4 - Forest Resources of the Southern Coastal Plain of North Carolina.
April 1, 1940

No. 5 - Forest Resources of the Northern Coastal Plain of North Carolina.
June 15, 1940

No. 6 - Forest Resources of the Piedmont Region of North Carolina.
November 15, 1940

No. 7 - Forest Resources of the Mountain Region of North Carolina.
April 1, 1941

No. 8 - The Distribution of Commercial Forest Trees in North Carolina.
May 15, 1941

No. 9 - The Distribution of Commercial Forest Trees in South Carolina.
May 15, 1941

No. 10 - The Distribution of Commercial Forest Trees in Virginia.
September 15, 1942

No. 11 - Virginia's Forests. November 1, 1942

No. 12 - The Forest Situation in the Coastal Plain of Virginia. April 1, 1943

No. 13 - The Forest Situation in Piedmont Virginia. May 15, 1943

No. 14 - Preliminary Estimate of 1942 Lumber Production in the Carolinas,
Virginia, West Virginia, Kentucky, and Tennessee. November 1, 1943

No. 15 - The Forest Situation in the Mountain Region of Virginia.
December 15, 1943

No. 16 - Wartime Lumber Production in the Appalachian Hardwood Region,
January 1942-June 1944. November 15, 1944

No. 17 - Wood Waste Available for Conversion to Ethyl Alcohol in the Columbia
Area of South Carolina. December 15, 1944

No. 18 - North Carolina Forest Growth and Drain, 1937-1943. January 31, 1945

No. 19 - Approximate Forest Area and Timber Volume by County in the Carolinas
and Virginia. April 1, 1945

USDA Miscellaneous Publications

No. 533 - North Carolina Forest Resources and Industries. January 1944

No. 552 - South Carolina Forest Resources and Industries. November 1944

FOREST SURVEY RELEASE NO 21 DECEMBER 15, 1946

1945 PULPWOOD PRODUCTION BY COUNTY IN THE CAROLINAS AND VIRGINIA

by

James F. McCormack
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A FOREST SURVEY PROGRESS REPORT

J. W. Cruikshank, Chief
Division of Forest Economics

U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

Southeastern Forest Experiment Station
I. T. Haig, Director
Asheville, N. C

PREFACE

Through the McSweeny-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act, and each of the 11 Regional Forest Experiment Stations is responsible for the work in its territory. In the Southeastern States the Forest Survey is an activity in the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth. Determination of the current rate of timber growth.

3. Drain. Determination of the amount of industrial and domestic wood used, and the total loss resulting from fire, insects, disease, suppression, and other causes.

4. Requirements. Determination of the current and probable future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

This progress report summarizes information on the 1945 production of pulpwood obtained in the course of compiling annual forest drain statistics by states and survey units.

1945 PULPWOOD PRODUCTION BY COUNTY

IN THE

CAROLINAS AND VIRGINIA

This statistical release presents data on 1945 pulpwood production by county in South Carolina, North Carolina, and Virginia. In addition, it includes a summary of pulpwood drain from these three states since the date of the original forest survey.

These data were compiled from information furnished to the Forest Survey by the individual pulp companies located in, or drawing wood from, the three-state territory. All pulpwood produced in the area was included regardless of where the receiving pulp mills were located. The majority of individual mills were able to report production by counties. In some cases, mills reported receipts by shipping points, and production was then assigned to counties on the basis of counties normally served by these shipping points. In a few cases, production was reported only by forest survey units. In such instances, production was prorated to counties within each unit on the basis of company reports for previous years or railroad shipping points normally used. Therefore, these data by counties show the approximate production and may contain small errors. Summaries of these data by groups of counties, survey units, or states will reduce the amount of error in proportion to the extent of grouping. The maps showing classes of production by counties are believed to be accurate, since the class intervals are broad enough to compensate for errors in the individual county data.

Table 1 is a summary of the total quantity of pulpwood produced in the three states, shown by survey unit and species group. Figures 1, 2, and 3 show 1945 pulpwood production by county in South Carolina, North Carolina, and Virginia, respectively. Similar data are shown in tabular form, alphabetically by county, in tables 2, 3, and 4. Table 5 shows the total pulpwood receipts at mills located in each of the three states, and the states from which the pulpwood was obtained. Table 6 indicates the volume of pulpwood exported from the Carolinas and Virginia, and the states to which the wood was shipped. Table 7 presents a historical record of the volume of pulpwood drain by states and species groups since the year of the original forest survey in each state.

Complete data on 1945 pulpwood production were not obtained in Georgia and Florida (both added to the Station's territory July 1, 1946), and are therefore not presented here.

All volumes are based on the 128 cubic-foot standard cord.

Table 1. - Pulpwood production in the Carolinas and Virginia, 1945

State	Forest survey unit	Species group			Total
		Softwoods	Hardwoods	Chestnut	
		Std. cords	Std. cords	Std. cords	Std. cords
South Carolina	Unit 1	248,343	30,032	-	278,375
	Unit 2	256,588	17,957	-	274,545
	Unit 3	318,835	5,590	121	324,546
	All units	823,766	53,579	121	877,466
North Carolina	Unit 1	154,724	5,120	-	159,844
	Unit 2	107,245	15,485	-	122,730
	Unit 3	92,046	10,701	5,497	108,244
	Unit 4	66,359	20,482	171,120	257,961
	All units	420,374	51,788	176,617	648,779
Virginia	Unit 1	341,447	21,323	-	362,770
	Unit 2	150,782	30,823	8,850	190,455
	Unit 3	72,514	31,757	6,808	111,079
	Unit 4	36,854	43,497	4,085	84,436
	Unit 5	4,048	5,266	40,845	50,159
	All units	605,645	132,666	60,588	798,899
All states	Total	1,849,785	238,033	237,326	2,325,144

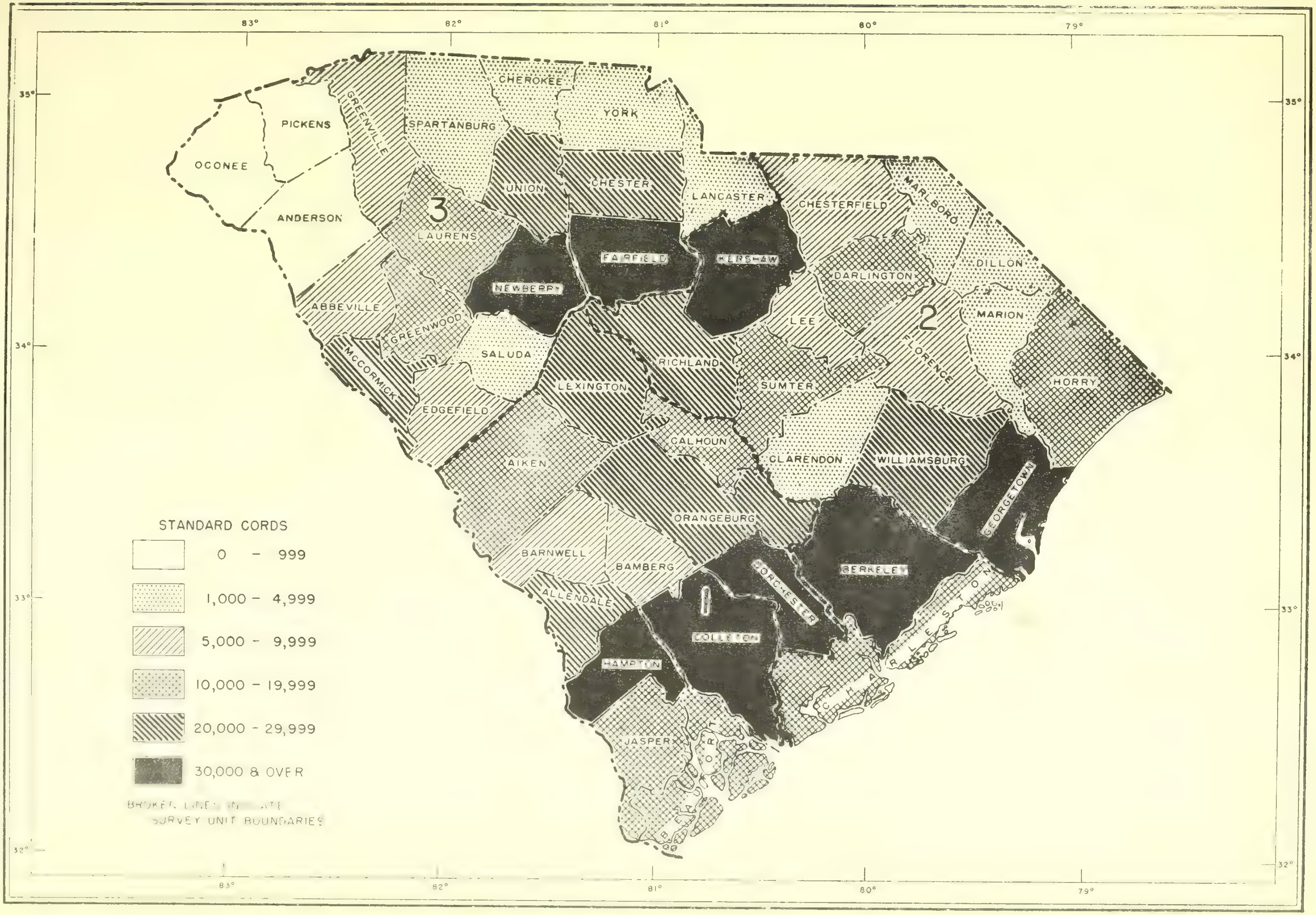

Figure 1. — Pulpwood production by counties in South Carolina, 1945

Table 2 — Pulpwood production by county in South Carolina, 1945

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std. cords	Std. cords	Std. cords	Std. cords
Abbeville	6,900	-	-	6,900
Aiken	11,900	100	-	12,000
Allendale	21,800	-	-	21,800
Anderson	100	-	-	100
Bamberg	5,600	3,300	-	8,900
Barnwell	6,700	2,600	-	9,300
Beaufort	10,000	-	-	10,000
Berkeley	56,900	2,500	-	59,400
Calhoun	13,800	-	-	13,800
Charleston	10,700	400	-	11,100
Cherokee	2,100	-	-	2,100
Chester	29,300	400	-	29,700
Chesterfield	4,700	2,500	-	7,200
Clarendon	4,300	500	-	4,800
Colleton	40,200	4,300	-	44,500
Darlington	9,400	2,700	-	12,100
Dillon	2,000	100	-	2,100
Dorchester	41,500	4,900	-	46,400
Edgefield	7,500	100	-	7,600
Fairfield	120,800	2,500	-	123,300
Florence	4,900	200	-	5,100
Georgetown	46,300	700	-	47,000
Greenville	5,800	300	-	6,100
Greenwood	16,700	200	-	16,900
Hampton	43,600	1,200	-	44,800
Horry	14,300	-	-	14,300
Jasper	15,400	100	-	15,500
Kershaw	29,100	2,600	-	31,700
Lancaster	2,600	-	-	2,600
Laurens	14,000	300	-	14,300
Lee	6,100	1,400	-	7,500
Lexington	25,500	1,500	-	27,000
Marion	2,300	100	-	2,400
Marlboro	2,700	-	-	2,700
McCormick	25,200	500	-	25,700
Newberry	57,300	900	-	58,200
Oconee	100	-	100	200
Orangeburg	12,400	12,000	-	24,400
Pickens	-	-	-	-
Richland	26,900	900	-	27,800
Saluda	4,400	100	-	4,500
Spartanburg	2,400	-	-	2,400
Sumter	9,900	1,000	-	10,900
Union	22,500	300	-	22,800
Williamsburg	26,100	2,400	-	28,500
York	1,100	-	-	1,100
All counties	823,800	53,600	100	877,500

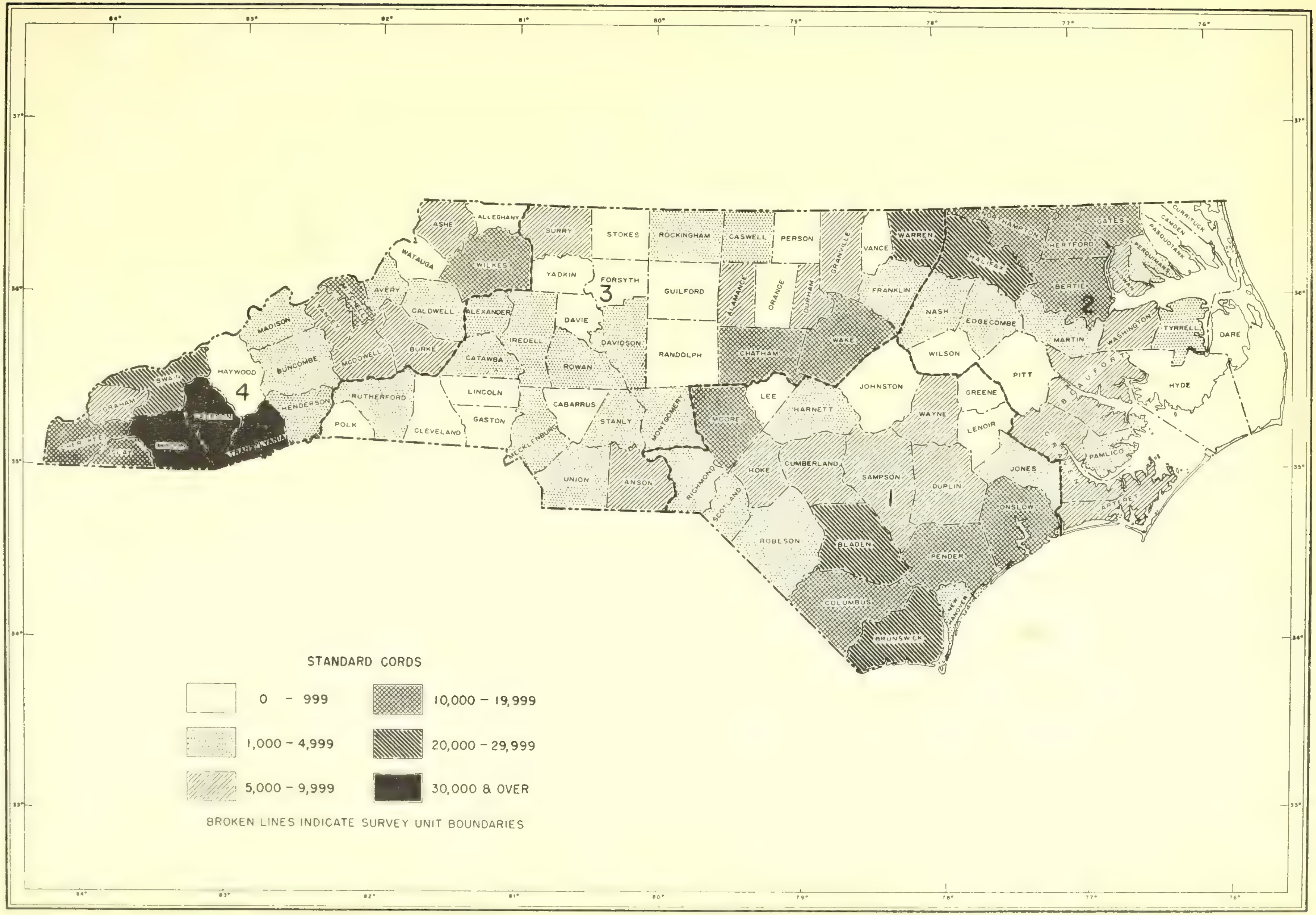

Figure 2 - Pulpwood production by county in North Carolina 1945

Table 3. - Pulpwood production by county in North Carolina, 1945

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Alamance	5,700	600	-	6,300
Alexander	1,900	100	-	2,000
Alleghany	-	-	-	-
Anson	4,600	1,100	-	5,700
Ashe	3,000	2,000	-	5,000
Avery	-	-	1,800	1,800
Beaufort	5,200	700	-	5,900
Bertie	13,400	3,300	-	16,700
Bladen	28,600	900	-	29,500
Brunswick	23,700	-	-	23,700
Buncombe	1,000	200	3,500	4,700
Burke	5,400	100	-	5,500
Cabarrus	-	-	-	-
Caldwell	600	-	400	1,000
Camden	-	-	-	-
Carteret	6,700	200	-	6,900
Caswell	1,700	400	-	2,100
Catawba	1,200	-	-	1,200
Chatham	14,600	-	-	14,600
Cherokee	8,900	2,800	2,600	14,300
Chowan	4,000	1,400	-	5,400
Clay	2,700	1,100	14,200	18,000
Cleveland	100	-	-	100
Columbus	10,600	500	-	11,100
Craven	5,600	600	-	6,200
Cumberland	9,000	500	-	9,500
Currituck	-	-	-	-
Dare	-	-	-	-
Davidson	700	300	-	1,000
Davie	200	-	-	200
Duplin	7,700	300	-	8,000
Durham	6,700	300	-	7,000
Edgecombe	1,000	100	-	1,100
Forsyth	-	200	-	200
Franklin	3,400	800	-	4,200
Gaston	-	-	-	-
Gates	13,000	1,300	-	14,300
Graham	2,800	1,100	3,400	7,300
Granville	5,500	200	-	5,700
Greene	-	-	-	-
Guilford	400	100	-	500
Halifax	20,700	1,100	-	21,800
Harnett	1,400	-	-	1,400
Haywood	-	-	200	200
Henderson	900	-	1,300	2,200
Hertford	12,800	1,200	-	14,000
Hoke	7,000	900	-	7,900
Hyde	-	-	-	-
Iredell	900	600	-	1,500
Jackson	1,300	1,600	40,600	43,500

Table 3. - North Carolina (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Johnston	-	-	-	-
Jones	3,400	200	-	3,600
Lee	600	-	-	600
Lenoir	-	-	-	-
Lincoln	-	-	-	-
Macon	2,500	2,900	46,600	52,000
Madison	400	-	2,900	3,300
Martin	4,200	700	-	4,900
McDowell	3,200	1,400	5,000	9,600
Mecklenburg	1,400	700	-	2,100
Mitchell	300	2,500	12,300	15,100
Montgomery	1,000	-	-	1,000
Moore	9,800	300	-	10,100
Nash	1,000	100	-	1,100
New Hanover	3,100	-	-	3,100
Northampton	10,000	1,000	-	11,000
Onslow	12,600	-		12,600
Orange	600	-	-	600
Pamlico	2,200	400	-	2,600
Pasquotank	-	-	-	-
Pender	15,100	-	-	15,100
Perquimans	2,900	800	-	3,700
Person	100	-	-	100
Pitt	-	-	-	-
Polk	400	100	-	500
Randolph	400	-	-	400
Richmond	2,200	200	-	2,400
Robeson	3,000	900	-	3,900
Rockingham	3,100	600	-	3,700
Rowan	400	600	-	1,000
Rutherford	2,900	-	-	2,900
Sampson	5,700	200	-	5,900
Scotland	4,500	-	-	4,500
Stanly	800	200	-	1,000
Stokes	-	100	-	100
Surry	100	-	5,500	5,600
Swain	4,000	3,100	14,700	21,800
Transylvania	20,200	300	15,600	36,100
Tyrell	1,100	400	-	1,500
Union	2,200	1,100	-	3,300
Vance	200	300	-	500
Wake	12,000	400	-	12,400
Warren	18,800	1,900	-	20,700
Washington	3,400	2,200	-	5,600
Watauga	-	-	-	-
Wayne	6,800	200	-	7,000
Wilkes	9,100	1,000	-	10,100
Wilson	-	-	-	-
Yadkin	-	-	-	-
Yancey	100	400	6,000	6,500
All counties	420,400	51,800	176,600	648,800

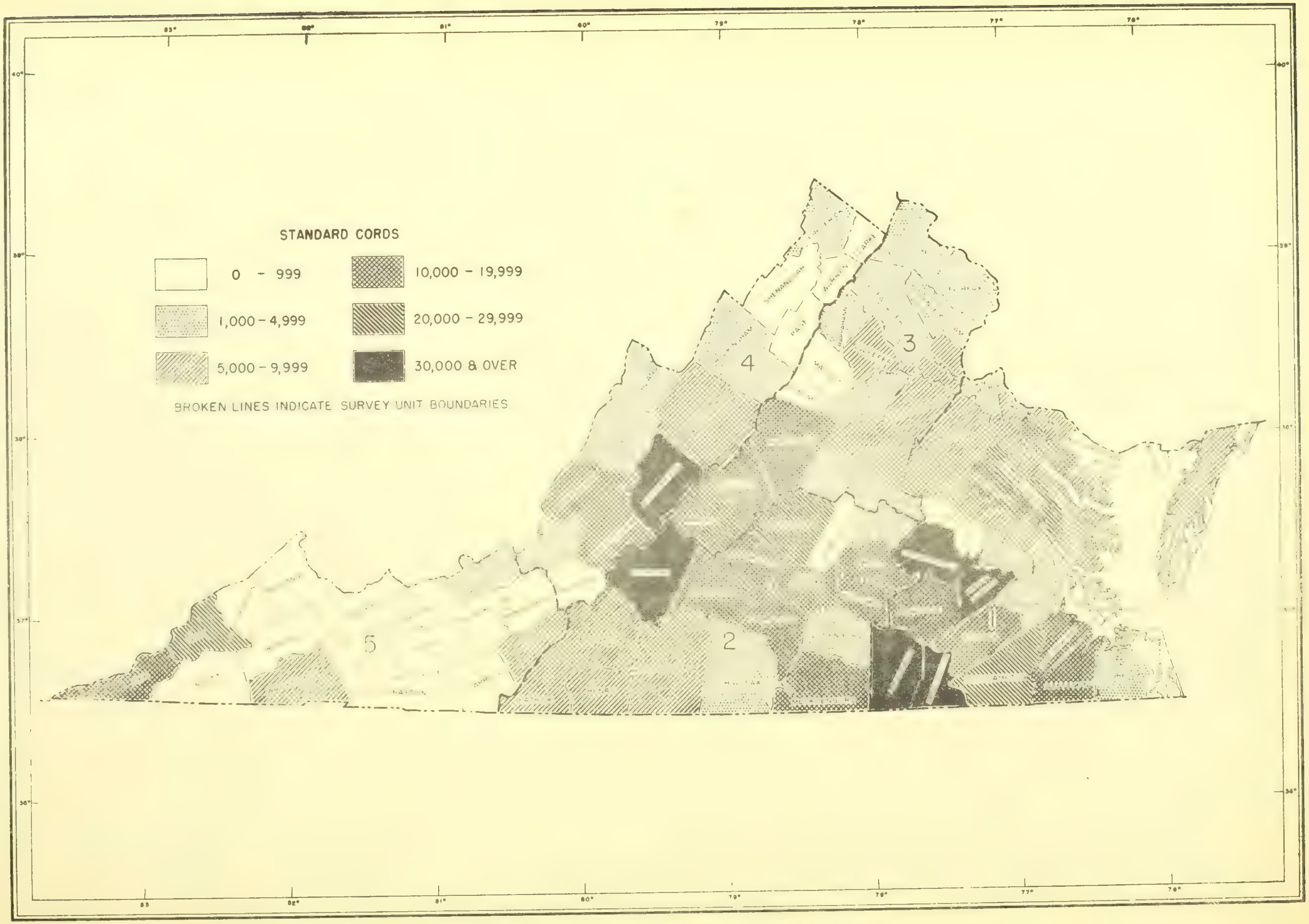

Figure 5 - Pulpwood production by county in Virginia 1945

Table 4. - Pulpwood production by county in Virginia, 1945

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std. cords	Std. cords	Std. cords	Std. cords
Accomac	8,200	-	-	8,200
Albemarle	10,500	3,800	-	14,300
Alleghany	7,200	6,800	-	14,000
Amelia	10,400	100	-	10,500
Amherst	15,600	7,000	6,800	29,400
Appomattox	9,900	4,300	-	14,200
Arlington	-	-	-	-
Augusta	2,400	2,700	-	5,100
Bath	2,000	2,300	-	4,300
Bedford	21,300	3,900	5,500	30,700
Bland	-	-	-	-
Botetourt	6,100	5,500	-	11,600
Brunswick	27,700	2,900	-	30,600
Buchanan	-	-	-	-
Buckingham	14,600	9,200	-	23,800
Campbell	11,100	1,500	-	12,600
Caroline	7,200	700	-	7,900
Carroll	500	200	-	700
Charles City	1,500	200	-	1,700
Charlotte	12,000	2,100	-	14,100
Chesterfield	40,900	3,500	-	44,400
Clarke	-	-	-	-
Craig	2,000	1,800	-	3,800
Culpeper	5,500	1,600	-	7,100
Cumberland	-	600	-	600
Dickenson	-	-	-	-
Dinwiddie	10,000	1,000	-	11,000
Elizabeth City	200	-	-	200
Essex	6,200	-	-	6,200
Fairfax	2,600	1,600	-	4,200
Fauquier	2,700	1,500	-	4,200
Floyd	500	300	6,800	7,600
Fluvanna	1,700	2,500	-	4,200
Franklin	4,900	300	-	5,200
Frederick	800	1,100	-	1,900
Giles	1,400	300	-	1,700
Gloucester	7,100	-	-	7,100
Goochland	2,800	400	-	3,200
Grayson	-	600	-	600
Greene	-	-	-	
Greensville	28,900	2,300	-	31,200
Halifax	2,300	700	-	3,000
Hanover	5,800	200	-	6,000
Henrico	500	-	-	500
Henry	5,000	300	-	5,300
Highland	2,000	2,300	-	4,300
Isle of Wight	9,200	1,000	-	10,200
James City	3,600	-	-	3,600
King and Queen	21,800	-	-	21,800
King George	2,100	1,200	-	3,300
King William	19,800	-	-	19,800

Table 4. - Virginia (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Lancaster	8,800	-	-	8,800
Lee	100	-	10,200	10,300
Loudoun	1,400	1,300	-	2,700
Louisa	6,200	700	-	6,900
Lunenburg	4,200	200	-	4,400
Madison	-	-	-	-
Mathews	1,100	-	-	1,100
Mecklenburg	9,700	700	-	10,400
Middlesex	5,100	-	-	5,100
Montgomery	500	300	-	800
Nansemond	13,000	1,500	-	14,500
Nelson	8,900	3,700	-	12,600
New Kent	8,600	-	-	8,600
Norfolk	2,000	300	-	2,300
Northampton	4,300	-	-	4,300
Northumberland	-	-	-	-
Nottoway	17,800	1,500	-	19,300
Orange	3,200	700	-	3,900
Page	-	-	-	-
Patrick	4,900	300	3,400	8,600
Pittsylvania	6,500	2,000	-	8,500
Powhatan	3,700	300	-	4,000
Prince Edward	12,500	2,800	-	15,300
Prince George	30,100	2,600	-	32,700
Prince William	2,700	1,900	-	4,600
Princess Anne	200	-	-	200
Pulaski	500	200	-	700
Rappahannock	1,200	1,200	-	2,400
Richmond	19,300	-	-	19,300
Roanoke	-	-	-	-
Rockbridge	13,000	20,000	4,100	37,100
Rockingham	500	500	-	1,000
Russell	-	-	-	-
Scott	-	-	-	-
Shenandoah	300	500	-	800
Smyth	-	600	-	600
Southampton	19,000	2,000	-	21,000
Spotsylvania	3,500	1,900	-	5,400
Stafford	4,000	2,000	-	6,000
Surry	4,300	400	-	4,700
Sussex	14,100	1,500	-	15,600
Tazewell	-	-	-	-
Warren	500	-	-	500
Warwick	400	-	-	400
Washington	-	2,600	3,400	6,000
Westmoreland	8,000	-	-	8,000
Wise	-	-	20,400	20,400
Wythe	500	200	-	700
York	2,500	-	-	2,500
All counties	605,600	132,700	60,600	798,900

Table 5. - Source of pulpwood received at pulp mills in the Carolinas and Virginia, 1945

Location of mills	Species group	Source of wood							Total
		South Carolina	North Carolina	Virginia	Georgia	Ten-nessee	West Virginia	All other 1/	
		Std.cds	Std.cds	Std.cds.	Std.cds.	Std.cds.	Std.cds.	Std.cds.	Std.cds
South Carolina	Pine	592,778	86,589	-	158,485	-	-	5,897	843,749
	Hardwood	16,481	105	-	2,035	-	-	-	18,621
	Total	609,259	86,694	-	160,520	-	-	5,897	862,370
North Carolina	Pine	133,085	284,233	22,451	13,007	41,400	-	230	494,406
	Hardwood 2/	22,029	210,915	1,275	22,241	6,348	-	13	262,821
	Total	155,114	495,148	23,726	35,248	47,748	-	243	757,227
Virginia	Pine	1,903	49,552	537,969	-	-	1,366	2,048	592,838
	Hardwood 2/	190	15,883	165,476	-	31,000	7,966	1,370	221,885
	Total	2,093	65,435	703,445	-	31,000	9,332	3,418	814,723
All states 3/	Pine	727,766	420,374	560,420	171,492	41,400	1,366	8,175	1,930,993
	Hardwood 2/	38,700	226,903	166,751	24,276	37,348	7,966	1,383	503,327
	Total	766,466	647,277	727,171	195,768	78,748	9,332	9,558	2,434,320

1/ Florida, Kentucky, and Alabama

2/ Includes chestnut.

3/ See table 6 for exports from Carolinas and Virginia to mills outside of these three states

Table 6. - Pulpwood exports from the Carolinas and Virginia, 1945

Source of wood	Species group	Destination of wood			Total
		Pennsylvania	Georgia	Other states 1/	
		Std.cords	Std.cords	Std.cords	Std.cords
South Carolina	Pine	-	96,000	-	96,000
	Hardwood	-	15,000	-	15,000
	Total	-	111,000	-	111,000
North Carolina	Pine	-	-	-	-
	Hardwood	-	-	1,502	1,502
	Total	-	-	1,502	1,502
Virginia	Pine	36,015	-	9,210	45,225
	Hardwood	24,088	-	2,415	26,503
	Total	60,103	-	11,625	71,728
All states	Pine	36,015	96,000	9,210	141,225
	Hardwood	24,088	15,000	3,917	43,005
	Total	60,103	111,000	13,127	184,230

1/ Maryland and Tennessee.

Table 7. - Historical record of pulpwood[1/] drain in the Carolinas and Virginia, 1936-1945

Year	South Carolina		North Carolina		Virginia		Total	
	Pine	Hdwd.	Pine	Hdwd.	Pine	Hdwd.	Pine	Hdwd.
	M cds.	M cds.	M cds.	M cds.	M cds.	M cds.	M cds.	M cds.
1936	35.8	12.8	2/	2/	2/	2/	2/	2/
1937	364.4	29.3	170.4	69.6	2/	2/	2/	2/
1938	362.7	21.6	250.6	40.3	2/	2/	2/	2/
1939	533.6	17.0	275.4	40.0	2/	2/	2/	2/
1940	602.8	67.5	431.2	80.9	615.6	85.2	1,649.6	233.6
1941	727.0	70.9	495.5	87.2	699.9	72.6	1,922.4	230.7
1942	891.9	54.2	516.0	90.3	651.1	90.5	2,059.0	235.0
1943	936.0	38.8	465.3	82.0	679.4	138.1	2,080.7	258.9
1944[3/]	920.1	40.7	444.9	75.5	667.3	162.4	2,032.3	278.6
1945[3/]	823.8	53.6	420.4	51.8	605.6	132.7	1,849.8	238.1

[1/] Chestnut is not included.

[2/] Prior to original forest survey, data not compiled.

[3/] Amount of pulpwood produced; final drain estimates will be slightly less due to adjustments for over-utilization.

PULP MILLS DRAWING WOOD FROM THE CAROLINAS AND VIRGINIA

South Carolina

International Paper Co., Southern Kraft Div.	Georgetown, S. C.
West Virginia Pulp & Paper Company	Charleston, S. C.
Sonoco Products Company	Hartsville, S. C.

North Carolina

Champion Paper & Fibre Company	Canton, N. C.
Halifax Paper Company	Roanoke Rapids, N. C.
Mead Corporation	Sylva, N. C.
North Carolina Pulp Company	Plymouth, N. C.

Virginia

Bedford Pulp and Paper Company	Big Island, Va.
Camp Manufacturing Company	Franklin, Va.
Chesapeake Corporation of Virginia	West Point, Va.
Columbian Paper Company	Buena Vista, Va.
Columbian Paper Company	Bristol, Va.
Hummel-Ross Fibre Corp.	Hopewell, Va.
Johns-Manville Products Corp.	Jarratt, Va.
Mead Corporation	Lynchburg, Va.
West Virginia Pulp & Paper Company	Covington, Va.

Georgia

Brunswick Pulp & Paper Co.	Brunswick, Ga.
Union Bag & Paper Corporation	Savannah, Ga.

Pennsylvania

Armstrong Forest Company	Lock Haven, Pa.
P. H. Glatfelter Company	Spring Grove, Pa.
West Virginia Pulp & Paper Company	Tyrone, Pa.
West Virginia Pulp & Paper Company	Williamsburg, Pa.

Maryland

West Virginia Pulp & Paper Company	Luke, Md.

Tennessee

Mead Corporation	Kingsport, Tenn.

Forest Survey Reports
published by
Southeastern Forest Experiment Station

Forest Survey Releases

No. 1 - Forest Resources of the Northern Coastal Plain of South Carolina. July 15, 1939
No. 2 - Forest Resources of the Piedmont Region of South Carolina. September 1, 1939
No. 3 - Forest Resources of the Southern Coastal Plain of South Carolina. December 1, 1939
No. 4 - Forest Resources of the Southern Coastal Plain of North Carolina. April 1, 1940
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No. 9 - The Distribution of Commercial Forest Trees in South Carolina. May 15, 1941
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No. 12 - The Forest Situation in the Coastal Plain of Virginia. April 1, 1943
No. 13 - The Forest Situation in Piedmont Virginia. May 15, 1943
No. 14 - Preliminary Estimate of 1942 Lumber Production in the Carolinas, Virginia, West Virginia, Kentucky, and Tennessee. November 1, 1943
No. 15 - The Forest Situation in the Mountain Region of Virginia. December 15, 1943
No. 16 - Wartime Lumber Production in the Appalachian Hardwood Region, January 1942-June 1944. November 15, 1944
No. 17 - Wood Waste Available for Conversion to Ethyl Alcohol in the Columbia Area of South Carolina. December 15, 1944
No. 18 - North Carolina Forest Growth and Drain, 1937-1943. January 31, 1945
No. 19 - Approximate Forest Area and Timber Volume by County in the Carolinas and Virginia. April 1, 1945
No. 20 - South Carolina Forest Growth and Drain, 1936-1943. June 1, 1945

USDA Miscellaneous Publications

No. 533 - North Carolina Forest Resources and Industries. January 1944
No. 552 - South Carolina Forest Resources and Industries. November 1944

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FORESTT SURVEY RELEASE NO. 22 SEPTEMBER 1, 1947

SOUTHERN FORESTS AS A SOURCE OF PULPWOOD

by

J. W. Cruikshank

A FOREST SURVEY PROGRESS REPORT

J. W. Cruikshank, Chief
Division of Forest Economics

U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

Southeastern Forest Experiment Station
I. T. Haig, Director
Asheville, N. C.

PREFACE

Through the McSweeny-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act, and each of the 11 Regional Forest Experiment Stations is responsible for the work in its territory. In the Southeastern States the Forest Survey is an activity in the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth. Determination of the current rate of timber growth.

3. Drain. Determination of the amount of industrial and domestic wood used, and the total loss resulting from fire, insects, disease, suppression, and other causes.

4. Requirements. Determination of the current and probable future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

This progress report summarizes information on the timber resources of the South, with particular emphasis upon pulpwood, and points out ways by which the pulp and paper industry can help in assuring a permanent supply of raw material.

SOUTHERN FORESTS AS A SOURCE OF PULPWOOD[1]

by

James W. Cruikshank[2]

THE REGIONAL TIMBER RESOURCE

The South, as discussed here, includes the coastal states extending from the Potomac south to Florida and west to the plains of Texas, plus the inland states of Tennessee, Arkansas, and Oklahoma. Within its boundaries lie almost the entire commercial range of the southern yellow pines and a large part of the Nation's supply of hardwoods. It contains 183 million acres, or 40 percent, of the commercial forest land in the United States and 1.9 billion cords, or 28 percent, of the timber. Practically all is easily accessible by water, rail, or good roads. Even more important from the long-range view, its soils and climate favor rapid timber growth, and year-round logging seasons facilitate timber harvesting.

These advantages are not news to the pulp and paper industry. Today there are 51 mills manufacturing wood pulp with a total daily capacity of 12,900 tons of sulphate fiber, 400 tons of sulphite fiber, 375 tons of soda fiber, and 2,434 tons of semichemical pulp and ground wood. This is one-half the total U. S. pulp mill capacity. The annual wood requirement of these southern mills is now more than 8 million standard cords, and the demand for pulpwood is constantly increasing as present plants and new plants come into production.

In view of this large and growing demand for pulpwood it is timely to consider the characteristics of the timber resource upon which your industry depends. First let us consider the kinds of timber and their general location. Bordering the Atlantic and Gulf coasts from South Carolina to east Texas is the longleaf-slash pine forest (fig. 1) of the flat coastal plain, the source of all our gum naval stores. Altogether it covers nearly 35 million acres, two-thirds of which are in Florida and south Georgia. In the Carolinas and Virginia, the loblolly pine is the

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[1] Presented at the fall meeting of the Technical Association of the Pulp and Paper Industry, Detroit, Mich., Sept. 26-28, 1946. Published in Pulpwood - Stands, Procurement, and Utilization (TAPPI Monograph Series No. 4). 1946.

[2] Chief, Division of Forest Economics, Southeastern Forest Experiment Station.

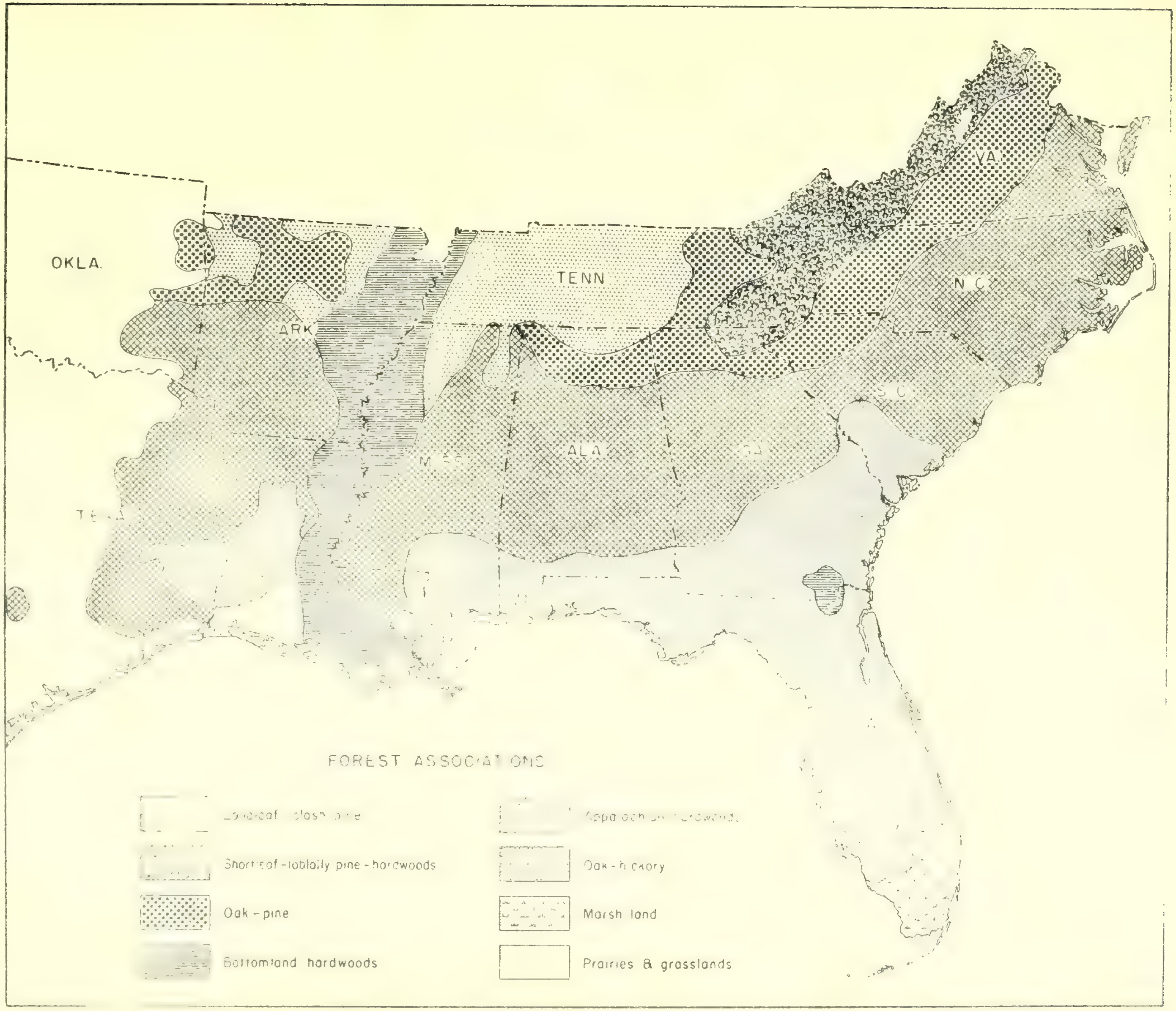

Figure 1. - Major forest associations of the South.

leading species of the coastal plain with shortleaf pine the dominant tree farther inland on the Piedmont. The scrubby and short-lived Virginia pine spreads across all three states in the foothills of the Appalachians and on into north Georgia and Alabama. The separation between loblolly and shortleaf pine is less distinct in the deep South; and the rolling hills of Georgia, Alabama, Mississippi, Louisiana, and Texas are clothed with a mixed loblolly-shortleaf-hardwood forest. Southwestern Arkansas runs heavily to loblolly pine in mixture with hardwoods, but in the mountainous section of the State loblolly is replaced by shortleaf. Tennessee is chiefly a hardwood state, although scattered shortleaf pine is found in the Tennessee Valley, and a narrow belt extends along the western edge of the Appalachians into Kentucky. Altogether, there are nearly 70 million acres of this loblolly-shortleaf-hardwood forest in the region. Other forests, somewhat less important from a pulpwood standpoint, are the Appalachian hardwoods of western North Carolina, Virginia, and north Georgia, the scattered stands of upland hardwoods that break up the continuity of the pine timberlands, the bottomland hardwoods that occur along all of the major rivers, and the broad expanse of Delta hardwoods that occupy the Mississippi flood plain.

When we think of Southern forests, we are almost sure to think of the pines for which it has been famous since earliest colonial times, so it may be somewhat of a surprise to learn that of a total stand of 1.9 billion cords, over 55 percent is hardwood. Softwoods, chiefly the several southern yellow pines, total about 833 million cords. The preponderance of hardwoods is primarily in the smaller tree sizes; hardwood saw timber totals only 144 billion board feet compared to 194 billion feet of pine.

Compared to an annual pulpwood requirement of about 8 million cords, these timber volumes appear very reassuring, apparently indicating a considerable supply of timber for the present and for some time to come. However, pulpwood accounts for only 10 percent of the total cut, and pulpwood producers must compete with other industries for wood. Also, even though 55 percent of the wood in the South is in hardwood species, less than one-tenth of the pulpwood is cut from hardwoods. Major changes in pulping processes, plant equipment, final product, and wood-procurement practices will be necessary before hardwoods enter strongly into the supply picture.

What we are really concerned with is how much timber can we grow in the South. Present timber volumes give us some indication how we have weathered the transition from virgin timber to second-growth, and they influence the kind and extent of industrial utilization, but for the long pull sound industrial development must be based upon using not more than the annual growth of wood. For the South as a whole, the annual growth totals approximately 50 million cords of softwoods and 44 million cords of hardwoods. Thus, we are growing about one-half cord per average acre per year, but only one-quarter of a cord of the desired softwoods. This is much less than the land is capable of producing, and

Table 1. - Total quantity of timber in the South, 1945

Species group	Volume		Air-dry weight	
	Million cords	Percent	Million tons	Percent
Softwoods:				
Loblolly pine	407	21	512	21
Shortleaf pine	228	12	288	12
Longleaf pine	89	5	128	5
Slash pine	60	3	80	3
Cypress	27	1	30	1
Others	22	1	20	1
Total	833	43	1,058	43
Hardwoods:				
Red oaks	250	13	357	14
White oaks	167	9	256	10
Sweetgum	200	10	221	9
Tupelo, blackgum	144	7	164	7
Yellow-poplar	65	3	59	2
Beech, birch, maples	28	1	36	1
Others	262	14	335	14
Total	1,116	57	1,428	57
All species	1,949	100	2,486	100

Note: Cord volumes derived from inside-bark cubic-foot volumes on the basis of 70 cubic feet of softwoods or 65 cubic feet of hardwoods per cord. Species distribution based on sawlog volumes only.

is also much less than we need if the South is to contribute its share of the wood requirements of a prosperous nation. There is every reason to believe that a major part of the pine land in the South can grow a cord of wood per acre per year. This can eventually be accomplished, but, even with an aggressive forestry program, it will take a number of decades to achieve if we continue at the same time to meet the needs of the forest industries.

One of the major problems to be solved before we can make substantial progress toward increasing the annual yield of wood is to control timber losses from such destructive agencies as fire, insects, and disease. Such losses now amount to 13 million cords annually--60 percent more than the entire cut of pulpwood. Fire is the most important causal agency, and the one most susceptible to control. Forest insects and tree diseases take a toll of both softwoods and hardwoods, but widespread outbreaks are rare. At present, the greatest threat to the softwoods, aside from fire, is the so-called "little-leaf disease" of the shortleaf pine. Already hundreds of thousands of cords of timber have died, and the mortality rate continues unchecked despite the efforts of skilled pathologists seeking the cause and cure. Our objective should be to reduce these fire, insect, and disease losses as rapidly and completely as possible, and use the wood to satisfy the needs of southern people and industries. During recent years there has been a definite and steady industrial development in this region, and there is every indication that this trend will continue at an accelerated rate. This development is reflected in the drain upon the timber stands, which has increased by at least 15 percent during the last decade. In 1944 the total amount of wood cut from southern forests amounted to about 46 million cords of softwoods and 36 million cords of hardwoods, distributed by commodities as follows:

Table 2. - Distribution of commodity drain in the South, 1944

Commodity	Total	Softwoods	Hardwoods
	Percent	Percent	Percent
Lumber	51	55	46
Fuel wood	21	18	24
Pulpwood	10	17	2
Hewn ties	6	4	7
Veneer	3	1	7
All other	9	5	14
Total	100	100	100

What effect have these heavy annual drains had upon the forest growing stock? The latest statistics show that both softwood and hardwood saw timber have decreased about 10 percent in the last decade, the entire softwood growing stock has declined about 3 percent, while the small hardwoods, chiefly of the poor-quality species, have increased considerably faster than they are being utilized. This trend is confirmed by the growth and drain balance for 1944 (table 3), which shows that softwoods decreased by 2.5 million cords while the hardwoods increased by 1.7 million cords. Those whose knowledge of timber conditions extends back over a period of years realize that the change in total volume is only part of the story. Past cutting practices, which selected the better trees of the better species, have resulted in a progressive deterioration in the quality as well as quantity of growing stock. Thus, each year's cut is replaced by inferior growth.

Table 3. - Comparison of annual growth and drain in the South, 1944

Item	All trees 5.0" d.b.h. & larger			Saw-timber trees		
	Total	Softwoods	Hardwoods	Total	Softwoods	Hardwoods
	Million cords	Million cords	Million cords	Million bd.ft.	Million bd.ft.	Million bd.ft.
Annual growth	94.5	50.3	44.2	19,949	12,923	7,026
Drain:						
Fire, disease, etc.	12.9	6.8	6.1	2,275	1,561	714
Cutting	82.4	46.0	36.4	22,627	14,077	8,550
Total	95.3	52.8	42.5	24,902	15,638	9,264
Net change	-0.8	-2.5	+1.7	-4,953	-2,715	-2,238

COMPETITION FOR AVAILABLE TIMBER

Is there a connection between the declining timber resource and present wood costs and procurement difficulties? I believe there is. Pulpwood procurement men know that theirs is a job which is becoming increasingly difficult. Some can think back 10 years when yellow pine stumpage sold for 75 cents a cord, and pulpwood delivered to the mill cost $4. Stumpage now averages about $2.25 and the OPA pulpwood price ceiling applicable to most parts of the South is $9. Ten years ago 15 miles was considered the longest distance over which it was practical to truck pulpwood. Today, 15 miles is just an average haul. Why have these changes occurred?

The immediate answer, of course, is competition. In 1936, there were only 30 pulp mills in the South. Wood fiber production totaled only 1-1/2 million tons. Since that time, 21 new plants have been added, and most of the original ones have expanded. Production this year is expected to exceed 4-3/4 million tons. In other words, your industry has increased its output, and presumably its wood requirements, by 320 percent in 10 years. Reference to a map (fig. 2) showing pulp mill locations discloses another cause of intensified competition for wood within the industry. It is the tendency to concentrate plant construction in certain localities favored for their supplies of good water and power, nearness to chemical centers, or availability of barge transportation. There are, for example, six wood pulp mills within 65 miles of Mobile, five in the Jacksonville area, and five east or south of Richmond. Along the Arkansas-Louisiana line are seven more, somewhat less closely grouped. Of 12 to 14 new sites proposed, about half either fall in areas already crowded or will create similar problem areas elsewhere. Thus, although some pulpwood is cut in nearly every county of the South, the demand is, and will remain, particularly intense in a few localities. In most cases, it is aggravated by serious over-cutting and consequent reduction of timber stocks.

So much for the competition generated within the pulp and paper industry itself. Of increasingly greater importance is the competition of other forest products industries. Foremost is lumber, which comprises 50 percent of all the drain on the forest resource. Theoretically, pulp and lumber should complement each other, the former preferring trees 8 to 12 inches in diameter or below desirable sawlog size. In recent years, however, this balance has been disturbed. Saw timber is becoming increasingly scarce. Except for periods of business depression, over-cutting has continued year after year since the first decade of the century. During the past 10 years alone, the volume of the average pine saw-timber tree has been reduced 25 percent in central Mississippi, 20 percent in southwest Georgia, and 35 percent in central Georgia and northeast Florida. At present, few sizable stands of large timber remain, and portable sawmills moving from one small tract to another account for most of the production. As available tracts become smaller and more scattered, and as the average

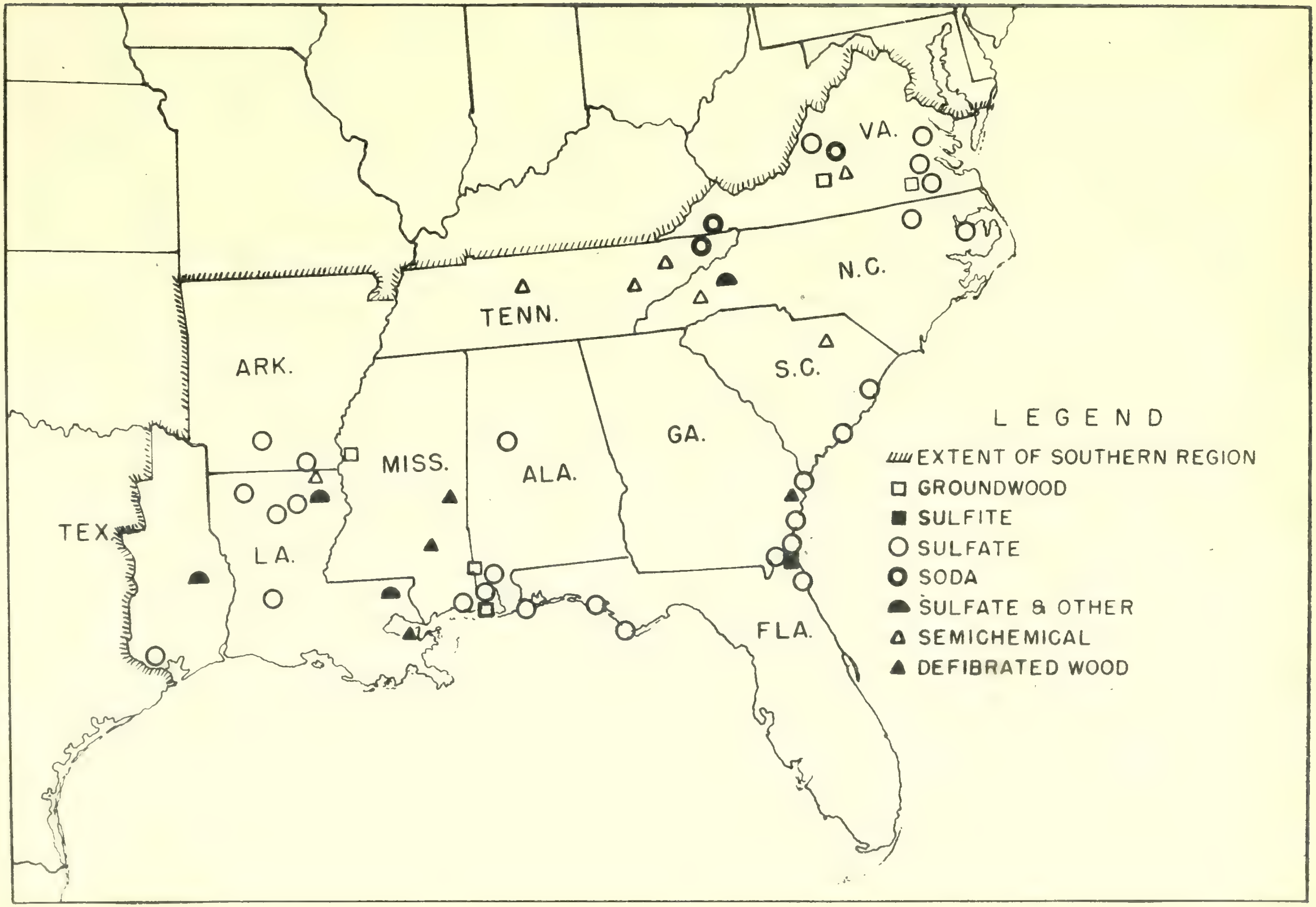

Figure 2. - Distribution and types of pulp mills in the South, 1946.

tree size is reduced, the distinction between saw timber and cordwood is gradually losing significance. With a boom market for all types of construction lumber (including low-grade 2x4's), lumbermen are contracting, in some cases, for yellow pine timber to a six-inch minimum diameter. At prevailing saw-timber prices, this is competition which pulpwood men are unable to meet. Others offering competition in some localities are the producers of small poles, excelsior, and staves for nail kegs.

A LOOK AHEAD

No new developments in the pulpwood supply situation are anticipated for the immediate future. Growing stock changes occur slowly; the decline already mentioned has been in progress for many years. The present brisk demand for all forest products may persist many more years. While it lasts, there will be stiff competition for wood between your and other wood-using industries. Indeed, should the lumber market hold up another ten years, the small operators may take an appreciable share of the better quality timber stands you expect to draw upon. Within the pulp and paper industry, competition for wood will be intensified by expansion of existing plant facilities and by new construction.

This problem of gradually tightening competition for a raw material that steadily shrinks both in volume and quality should be a vital concern to all of you with interests in the South. You represent an industry with a large fixed investment in plants. Unlike the small sawmill operator, it cannot afford to pick up those plants and move to fresh territory. Furthermore, the continued success of your industry hinges upon maintaining the advantage of low pulpwood and manufacturing costs it now enjoys over other producing regions. And it is fortunate for the South that this is so, for you and your industry are in a position to take the lead, not only in solving your own wood procurement problems, but in attacking the forest problems of the region. Because, in a real sense, the two are the same.

Your plan of attack might logically include three phases: (1) intensified research, chemical and economic, in the utilization of wood material not now in general demand; (2) forest land acquisition; and (3) a highly organized region-wide program to promote better cutting practices and forest protection, and to increase the productivity of forest land.

The first phase--intensified research in the economic and technical aspects of utilizing hardwoods, cull trees, and logging and manufacturing waste--would be a step toward assuring yourselves an ample supply of raw material at a price little affected by competition. There is, for instance, nearly two million cords per year excess of hardwood growth over drain, mostly in trees of convenient size for pulping. Also

available are 300 million cords of sound material in hardwood cull trees. Practically its only present use is for fuel. About 950,000 cords of hardwoods per year are now pulped for use in high-tonnage products such as kraft paper and paperboard, in hardboard, insulation board, roofing, and in finer grade papers. Nearly 400,000 of this is dead chestnut in the form of spent chips from tannin extract plants, but some kraft mills introduce as much as 10 percent of "live" hardwood fiber into high-strength paper and board. Other mills have abandoned hardwoods after unfortunate experiences with poorly controlled ratios of pine and hardwood pulps or with promiscuous mixtures of hardwood species. The greater cost of cutting and processing has been a further handicap. However, hardwood pulps tend to give improved surface, formation, and other properties often desirable in corrugating and liner boards. The International Paper Company now has a hardwood plant for this purpose under construction at Georgetown, South Carolina. Company foresters hope that much of the wood will come from improvement cuttings in mixed pine-hardwood stands, thereby increasing the future yield of pine.

The other possible source of pulpwood--logging and manufacturing waste--is in many respects the most promising. In the South, each cubic foot of forest products ready for the consumer or remanufacturer represents 1.6 cubic feet of sound timber removed from the forest growing stock. Waste produced by logging and primary manufacturing operations in the three states of Virginia, North Carolina, and South Carolina alone amounts to 680 million cubic feet a year. Eventually, a little is salvaged for pulpwood and a larger portion for fuelwood, but the equivalent of 6 million cords is never utilized. The unused logging waste alone is sufficient to satisfy the demand for pulpwood in these states.

The obstacles to the fuller utilization of waste are largely economic. Perhaps the most important of these is the cost of handling and transportation. Much of the waste is small material widely scattered through the forest or in small concentrations at great numbers of remote plants. Most of that accessibly located is already being used for some purpose. However, certain areas with a heavy concentration of forest industries and good rail and highway communication seem favorable to plant integration, and mechanization might solve many of the problems of handling.

On the second phase, namely forest land acquisition, an excellent start has already been made. Pulp company holdings now total over 6 million acres. If need be, they could provide over a third of your current needs without over-cutting. In this connection the question arises as to whether you should attempt to buy enough land to fill 100 percent of your needs. Theoretically, at least, the answer appears to be "no." In the first place, the old warning against "all your eggs in one basket" has no better application than to logging. The wider your cutting operations are scattered, the less chance there is of having your wood supply cut off by weather, labor troubles, and other temporary hindrances. In the second place, there is considerable evidence that it is good business

to integrate pulpwood production with the production of higher value material--sawlogs, poles, piling, etc.--sales of this material covering a major share of timber-growing costs. And from the standpoint of encouraging better forest practices, the presence of the pulp industry as a ready market for the products of thinnings and stand-improvement cuttings on non-company lands is most desirable. However, land acquisition is a logical safeguard, and the scientific management practiced thereon can serve as an example to other landowners.

Acquiring land and utilizing substitute woods are both projects which could produce positive and easily measurable results within a few years. The third phase of the attack on the wood-supply problem is, by comparison, more complicated and must be sustained for a relatively long period to accomplish its purpose--that is to say, increased production of quality wood on forest land tributary to your mills. To assure a worthwhile increase, the following minimum management requirements must be met: (1) protection from fire, (2) harvest cuttings which reserve mature trees in sufficient number to reseed the area cut over, and (3) intermediate cuttings in young stands to increase their yield. Omitting any one of the three steps will largely nullify the others.

Some progress has already been made in the fields of forest protection and management. For instance, 53 percent of our forest land has been brought under organized protection, and public appropriations for this purpose are being enlarged. Two southern states, South Carolina and Virginia, can now boast 100-percent coverage. Public and private agencies have also planted some two million acres of denuded land. Your own holdings offer an excellent example of the application of management practices. For the most part, they are well cared for. Similar examples of good management are to be found on some lumber-company and other private lands as well as on public forests, but well-managed tracts still comprise only a small portion of forest lands. The area meeting the minimum standards of protection and management probably does not exceed 20 percent of the total.

A potent factor impeding the wider application of management principles is the complex ownership pattern. Nearly 70 percent of the forest is in a million and a half private ownerships of less than 5,000 acres each. It is difficult to reach so vast a number of owners and to convince them that present gain should be deferred in favor of ultimately greater and perpetual profits. Few look beyond the present, and few are financially able to do so. As a result, cutting practices are determined largely by a desire for the maximum immediate return. Generally, they result in heavy over-cutting with haphazard restocking, and, frequently, conversion to low-grade hardwoods.

Since it is not probable that the existing ownership pattern will change materially for some time to come, the pulp industry has a considerable stake in the better handling of these small ownerships. In recent years, various public and private agencies including your own

Southern Pulpwood Conservation Association, have been guiding and assisting woodland owners in proper management practices. However, progress has been too slow to prevent continued depletion. These activities must be greatly expanded to obtain increased yields on an ever larger proportion of the forest. They should be supplemented by legislation establishing the minimum standards of cutting needed to prevent further deterioration on those lands not brought under management.

To sum up, the forest resources of the South are gradually deteriorating both in volume and quality. This deterioration is sufficiently advanced to be reflected in sharper competition for wood, and consequently, in rising wood costs. To meet this situation, your industry has already embarked on a land acquisition program. This is a logical step, but it is probably not feasible to seek complete self-sufficiency in this way. As an added safeguard, you should investigate the possibilities of supplementing supplies of pine with wood material less in demand. However, in the final analysis, the problem of pulpwood supply is one phase of the over-all forest problem of the region--namely, to prevent further depletion on a million and a half small ownerships while bringing as many as possible into greater productivity through management such as you practice on your own lands. Since the interests of your industry correspond to those of the general public in this matter, will you lend your full support to such a program?

FOREST SURVEY RELEASE NO. 23 NOVEMBER 15, 1947

1946 PULPWOOD PRODUCTION BY COUNTY IN THE SOUTHEAST

by

James W. Cruikshank, Chief
Division of Forest Economics

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE NORTH CAROLINA

I.T. HAIG, Director

PREFACE

Through the McSweeny-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act, and each of the 11 Regional Forest Experiment Stations is responsible for the work in its territory. In the Southeastern States the Forest Survey is an activity in the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

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5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

This progress report summarizes information on the 1946 production of pulpwood obtained in the course of compiling annual forest drain statistics by states and survey units.

1946 PULPWOOD PRODUCTION BY COUNTY

IN THE SOUTHEAST

This statistical release presents data on 1946 pulpwood production by county in Virginia, North Carolina, South Carolina, Georgia, and Florida. It is the second report of this kind published by the Forest Survey at the Southeastern Forest Experiment Station, the first one covering 1945 production in the Carolinas and Virginia.

These data were compiled from information furnished by all the pulp companies located in, or drawing wood from, the five-state territory. All pulpwood produced in the area was included even though some of the wood was shipped to mills outside these five states. Practically all of the individual mills reported production by counties. In a few cases mills reported receipts by shipping points, and production was then assigned to counties on the basis of the counties normally served by these shipping points. Therefore, these data by counties show the approximate production, but totals for groups of counties, survey units, or states should have little error. The maps showing classes of production by counties are believed to be accurate, since the class intervals are broad enough to compensate for errors in the individual county data.

The softwood volume includes all of the southern yellow pines and a small amount of hemlock. The hardwoods are chiefly the blackgums and sweetgum, with some yellow-poplar and soft maple, and smaller quantities of oak. The chestnut includes only the wood used for pulp; additional volumes were produced for use in plants making only tanning extract.

All volumes are based on the 128 cubic-foot standard cord.

In 1946 total pulpwood production in the five states was 4.7 million cords, a 9 percent increase above 1945. Eight percent less wood was produced in Georgia in 1946, but the other four states showed increases as follows: Virginia, 22 percent; South Carolina, 16 percent; Florida, 14 percent, and North Carolina, 10 percent. Only 5 percent more softwood pulpwood was cut from the forests of the five states, but hardwood production was increased by 67 percent.

Table 1. - Pulpwood production in the Southeast, 1946

State	Forest survey unit	Species group			Total
		Softwoods	Hardwoods	Chestnut[1]	
	Number	Std.cords	Std.cords	Std.cords	Std.cords
Virginia	[2] 1	408,314	20,983	-	429,297
	2	195,154	67,466	5,267	267,887
	3	82,894	57,690	18,914	159,498
	4	29,820	46,797	6,903	83,520
	5	1,651	8,700	20,624	30,975
	All units	717,833	201,636	51,708	971,177
North Carolina	1	123,884	5,459	-	129,343
	2	127,538	17,150	-	144,688
	3	93,783	9,049	287	103,119
	4	81,096	38,886	212,713	332,695
	All units	426,301	70,544	213,000	709,845
South Carolina	1	354,932	22,885	-	377,817
	2	127,280	41,867	-	169,147
	3	128,918	23,194	-	152,112
	4	298,109	24,606	233	322,948
	All units	909,239	112,552	233	1,022,024
Georgia	1	509,538	42,377	-	551,915
	2	203,619	363	-	203,982
	3	269,155	8,729	-	277,884
	4	84,072	1,488	-	85,560
	5	12,396	4,810	6,618	23,824
	All units	1,078,780	57,767	6,618	1,143,165
Florida	1	465,578	127	-	465,705
	2	250,955	3,545	-	254,500
	3	136,423	-	-	136,423
	4	8,539	-	-	8,539
	All units	861,495	3,672	-	865,167
All states	Total	3,993,648	446,171	271,559	4,711,378

[1] Includes only the chestnut used for pulp; an additional volume was used by plants making only tanning extract.

[2] For location of survey units, see Figure 1.

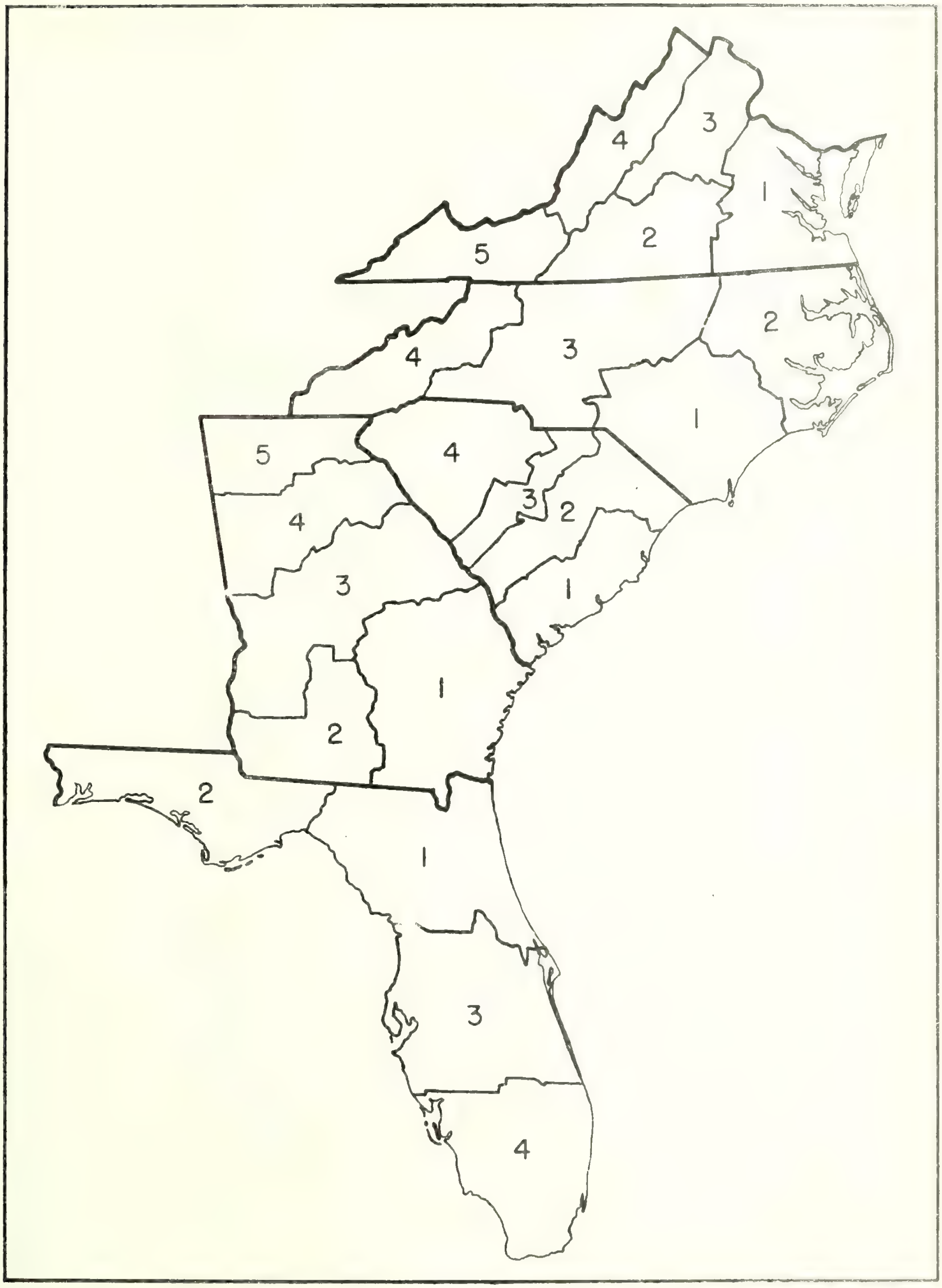

Figure 1. Location of Forest Survey units in the Southeast.

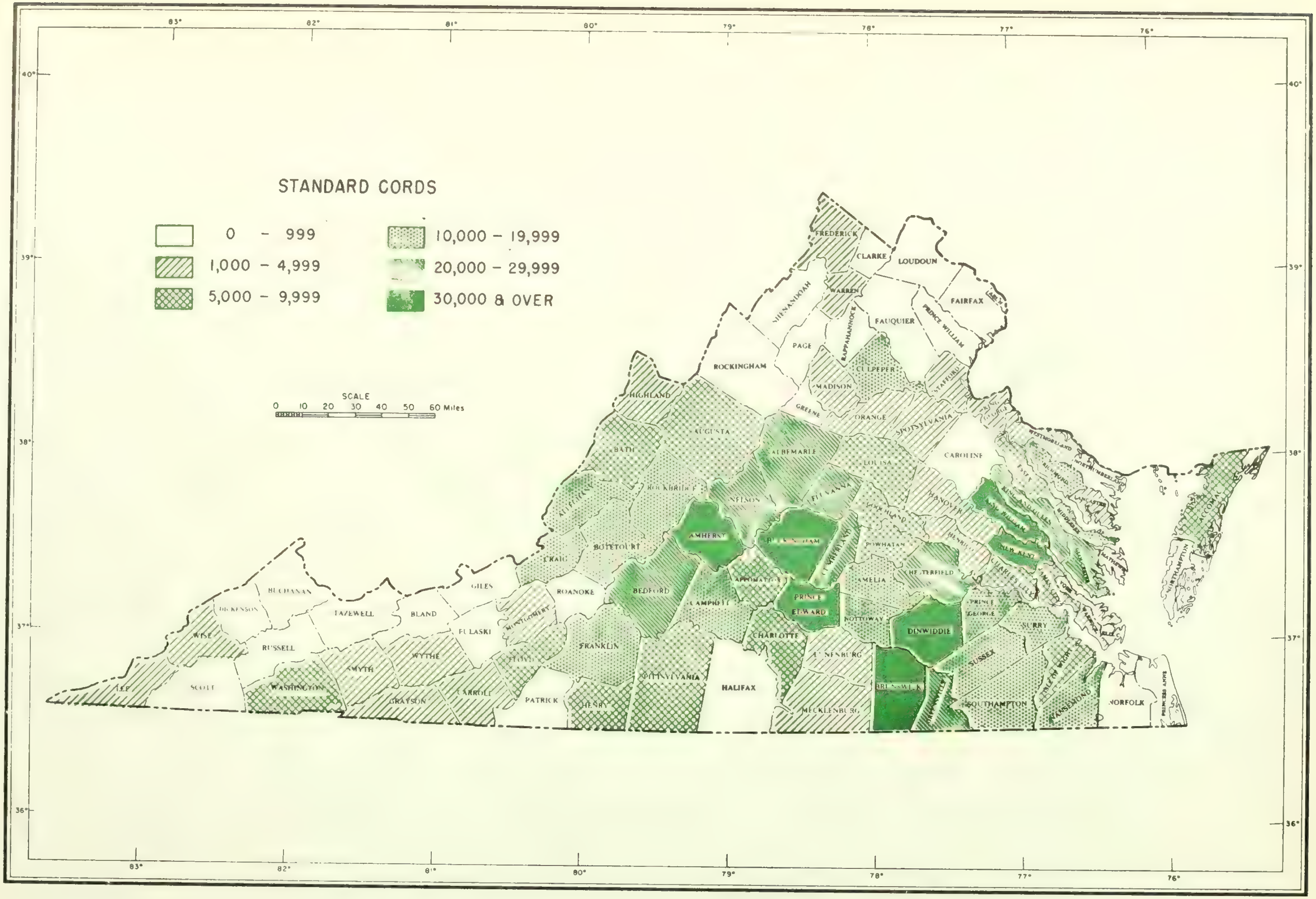

Figure 2. - Pulpwood production by county in Virginia, 1946.

Table 2. - Pulpwood production by county in Virginia, 1946

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Accomac	9,762	7	-	9,769
Albemarle	18,199	5,856	2,150	26,205
Alleghany	1,896	7,822	918	10,636
Amelia	14,464	884	-	15,348
Amherst	15,330	21,012	5,157	41,499
Appomattox	5,246	1,111	-	6,357
Arlington	-	-	-	-
Augusta	3,188	5,058	-	8,246
Bath	1,580	5,215	-	6,795
Bedford	17,983	5,187	4,431	27,601
Bland	-	-	391	391
Botetourt	5,199	5,815	1,105	12,119
Brunswick	53,298	2,029	-	55,327
Buchanan		-	-	-
Buckingham	46,624	37,540	-	84,164
Campbell	10,170	1,227	-	11,397
Caroline	306	590	-	896
Carroll	27	47	2,176	2,250
Charles City	7,270	45	-	7,315
Charlotte	4,289	1,270	-	5,559
Chesterfield	21,106	753	-	21,859
Clarke	252	35	-	287
Craig	4,852	10,368	4,052	19,272
Culpeper	10,763	4,016	-	14,779
Cumberland	19,056	6,026	-	25,082
Dickenson	-	-	-	-
Dinwiddie	32,373	2,493	-	34,866
Elizabeth City	-	-	-	-
Essex	7,222	-	-	7,222
Fairfax	804	92	-	896
Fauquier	493	94	-	587
Floyd	338	359	4,776	5,473
Fluvanna	12,036	12,776	-	24,812
Franklin	9,509	1,879	358	11,746
Frederick	3,291	783	-	4,074
Giles	25	17	229	271
Gloucester	23,801	-	-	23,801
Goochland	6,836	1,883	-	8,719
Grayson	27	1,870	1,779	3,676
Greene	674	-	-	674
Greensville	22,939	1,476	-	24,415
Halifax	459	-	-	459
Hanover	2,037	887	-	2,924
Henrico	912	206	-	1,118
Henry	7,859	237	478	8,574
Highland	1,898	1,738	-	3,636
Isle of Wight	7,645	917	-	8,562
James City	6,798	-	-	6,798
King and Queen	29,966	-	-	29,966
King George	873	233	-	1,106
King William	44,999	17	-	45,016

Table 2. - Virginia (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Lancaster	4,908	-	-	4,908
Lee	119	1,014	-	1,133
Loudoun	182	-	-	182
Louisa	5,334	2,248	-	7,582
Lunenburg	1,059	85	-	1,144
Madison	873	200	-	1,073
Mathews	146	-	-	146
Mecklenburg	1,256	26	-	1,282
Middlesex	13,523	-	-	13,523
Montgomery	990	858	2,751	4,599
Nansemond	4,973	6,717	-	11,690
Nelson	6,139	7,591	10,020	23,750
New Kent	30,596	1,346	-	31,942
Norfolk	350	-	-	350
Northampton	-	-	-	-
Northumberland	301	-	-	301
Nottoway	17,796	2,202	-	19,998
Orange	2,574	731	1,587	4,892
Page	74	23	-	97
Patrick	-	-	-	
Pittsylvania	8,969	592	-	9,561
Powhatan	6,667	1,207	-	7,874
Prince Edward	23 748	7,993	-	31,741
Prince George	13,720	-	-	13,720
Prince William	100	-	-	100
Princess Anne	-	-	-	
Pulaski	34	-	305	339
Rappahannock	65	36	-	101
Richmond	16,955	-	-	16,955
Roanoke	781	95	-	876
Rockbridge	5,283	9,656	828	15,767
Rockingham	136	22	-	158
Russell	-	-	225	225
Scott	-	715	-	715
Shenandoah	248	13	-	261
Smyth	74	875	2,130	3,079
Southampton	18,405	1,340	-	19,745
Spotsylvania	1,408	691	-	2,099
Stafford	1,084	464	-	1,548
Surry	11,106	-	-	11,106
Sussex	14,961	1,927	-	16,888
Tazewell	-	-	-	-
Warren	1,142	154	-	1,296
Warwick	2,420	-	-	2,420
Washington	-	1,963	3,436	5,399
Westmoreland	1,637	-	-	1,637
Wise	-	-	1,828	1,828
Wythe	17	982	598	1,597
York	3,006	-	-	3,006
All counties	717,833	201,636	51,708	971,177

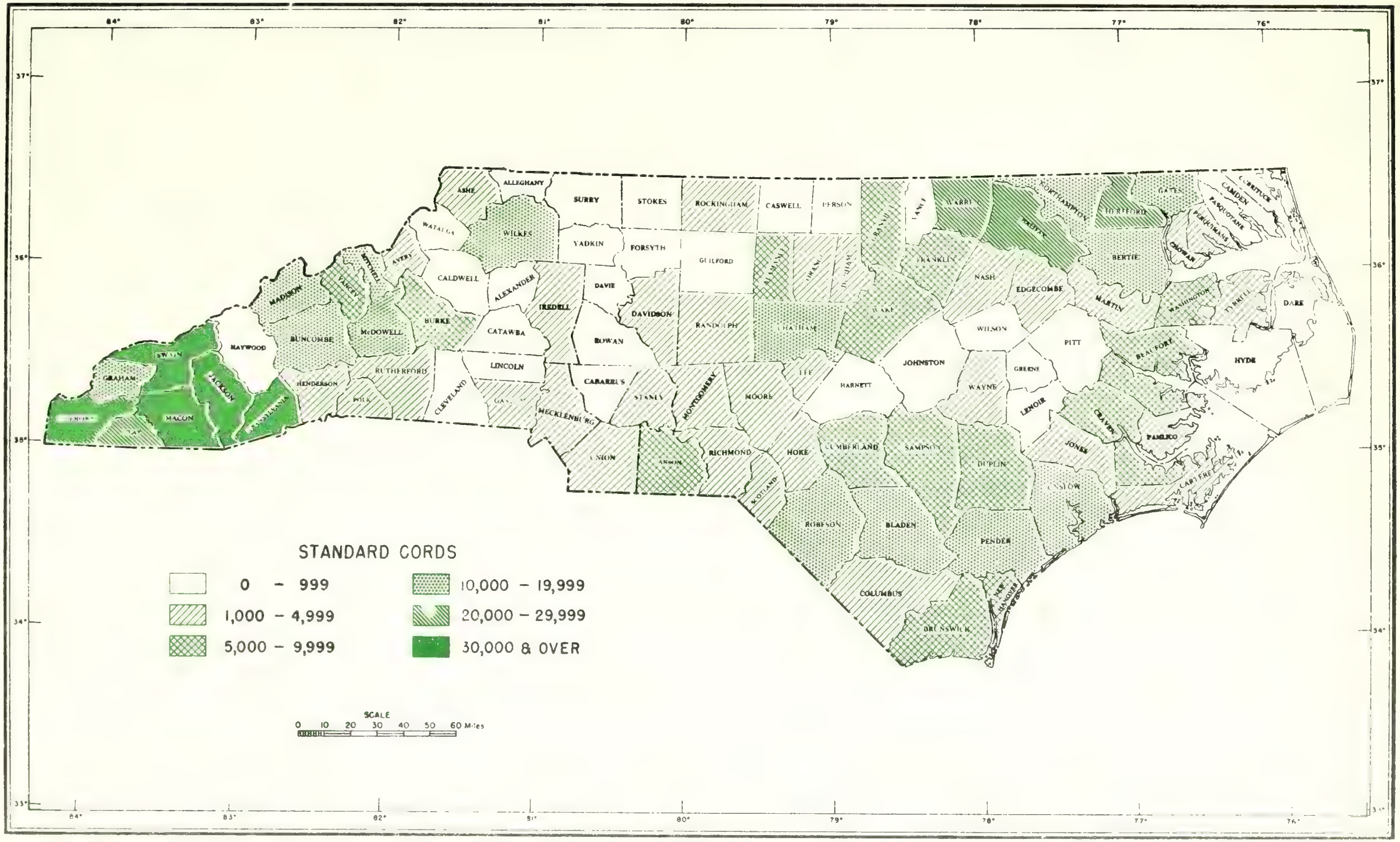

Figure 3. - Pulpwood production by county in North Carolina, 1946.

Table 3. - Pulpwood production by county in North Carolina, 1946

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Alamance	5,497	89	-	5,586
Alexander	521	59	-	580
Alleghany	-	-	251	251
Anson	4,587	946	-	5,533
Ashe	-	-	2,655	2,655
Avery	79	1,431	2,903	4,413
Beaufort	4,811	1,252	-	6,063
Bertie	8,539	3,244	-	11,783
Bladen	18,792	460	-	19,252
Brunswick	8,472	1,058	-	9,530
Buncombe	9,711	1,555	2,132	13,398
Burke	5,798	336	-	6,134
Cabarrus	-	-	-	-
Caldwell	350	238	16	604
Camden	-	-	-	-
Carteret	3,545	-	-	3,545
Caswell	16	-	-	16
Catawba	244	16	-	260
Chatham	8,865	1,636	-	10,501
Cherokee	12,792	6,958	3,997	23,747
Chowan	3,519	300	-	3,819
Clay	2,266	966	23,728	26,960
Cleveland	31	-	-	31
Columbus	4,618	16	-	4,634
Craven	7,743	818	-	8,561
Cumberland	6,770	1,187	-	7,957
Currituck	200	-	-	200
Dare	-	-	-	-
Davidson	-	1,570	-	1,570
Davie	62	-	-	62
Duplin	5,530	435	-	5,965
Durham	2,740	-	-	2,740
Edgecombe	1,186	162	-	1,348
Forsyth	-	338	-	338
Franklin	6,063	7	-	6,070
Gaston	2,022	-	-	2,022
Gates	18,201	1,479	-	19,680
Graham	5,358	1,955	5,544	12,857
Granville	5,816	-	-	5,816
Greene	-	-	-	-
Guilford	111	-	-	111
Halifax	26,218	-	-	26,218
Harnett	400	207	-	607
Haywood	-	-	69	69
Henderson	1,414	360	496	2,270
Hertford	24,291	893	-	25,184
Hoke	4,902	-	-	4,902
Hyde	-	-	-	-
Iredell	1,053	307	-	1,360
Jackson	476	5,839	46,249	52,564

Table 3. - North Carolina (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Johnston	-	-	-	-
Jones	1,000	100	-	1,100
Lee	1,259	275	-	1,534
Lenoir	-	-	-	-
Lincoln	-	-	-	-
Macon	2,659	4,057	54,334	61,050
Madison	1,003	618	9,083	10,704
Martin	3,061	752	-	3,813
McDowell	5,527	2,010	3,579	11,116
Mecklenburg	1,115	151	-	1,266
Mitchell	220	2,819	8,880	11,919
Montgomery	2,951	67	-	3,018
Moore	4,959	-	-	4,959
Nash	1,186	162	-	1,348
New Hanover	9,143	46	-	9,189
Northampton	13,655	896	-	14,551
Onslow	10,811	243	-	11,054
Orange	3,010	36	-	3,046
Pamlico	1,000	100	-	1,100
Pasquotank	-	-	-	-
Pender	16,865	210	-	17,075
Perquimans	2,000	2,087	-	4,087
Person	-	-	-	-
Pitt	-	-	-	-
Polk	1,315	195	-	1,510
Randolph	532	1,096	-	1,628
Richmond	2,196	41	-	2,237
Robeson	15,072	112	-	15,184
Rockingham	4,118	109	-	4,227
Rowan	-	16	-	16
Rutherford	3,819	365	16	4,200
Sampson	9,211	415	-	9,626
Scotland	2,704	620	-	3,324
Stanly	2,655	-	-	2,655
Stokes	510	22	-	532
Surry	295	-	271	566
Swain	6,392	5,225	20,283	31,900
Transylvania	15,407	1,160	20,764	37,331
Tyrrell	3,435	1,252	-	4,687
Union	2,473	818	-	3,291
Vance	63	-	-	63
Wake	8,640	712	-	9,352
Warren	24,659	494	-	25,153
Washington	4,938	3,753	-	8,691
Watauga	697	133	20	850
Wayne	1,180	34	-	1,214
Wilkes	10,895	2,154	490	13,539
Wilson	10	-	-	10
Yadkin	-	-	-	-
Yancey	52	1,072	7,240	8,364
All counties	426,301	70,544	213,000	709,845

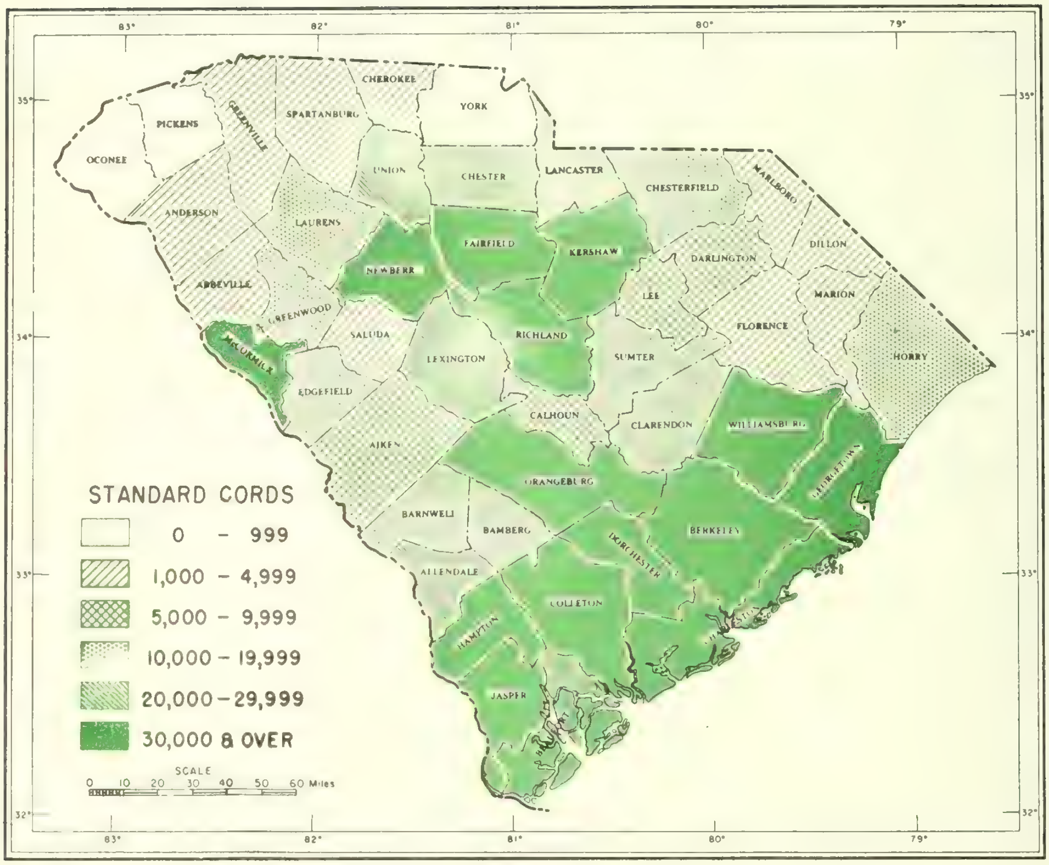

Figure 4. - Pulpwood production by county in South Carolina, 1946.

Table 4. - Pulpwood production by county in South Carolina, 1946

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Abbeville	2,743	-	-	2,743
Aiken	9,426	465	-	9,891
Allendale	25,797	2,517	-	28,314
Anderson	1,048	16	-	1,064
Bamberg	10,967	86	-	11,053
Barnwell	10,217	775	-	10,992
Beaufort	21,848	464	-	22,312
Berkeley	61,338	4,614	-	65,952
Calhoun	4,000	5,215	-	9,215
Charleston	29,059	1,731	-	30,790
Cherokee	2,488	-	-	2,488
Chester	20,815	1,608	-	22,423
Chesterfield	7,553	5,556	-	13,109
Clarendon	8,466	4,352	-	12,818
Colleton	29,647	4,441	-	34,088
Darlington	6,884	1,748	-	8,632
Dillon	3,140	775	-	3,915
Dorchester	65,698	2,274	-	67,972
Edgefield	16,644	590	-	17,234
Fairfield	93,577	12,534	-	106,111
Florence	2,489	1,800	-	4,289
Georgetown	49,298	3,466	-	52,764
Greenville	1,976	63	233	2,272
Greenwood	13,335	1,411	-	14,746
Hampton	34,803	2,733	-	37,536
Horry	14,811	782	-	15,593
Jasper	34,444	1,250	-	35,694
Kershaw	45,536	6,944	-	52,480
Lancaster	10,861	2,242	-	13,103
Laurens	12,288	553	-	12,841
Lee	4,658	2,401	-	7,059
Lexington	24,280	1,929	-	26,209
Marion	3,258	1,526	-	4,784
Marlboro	1,780	2,573	-	4,353
McCormick	44,998	300	-	45,298
Newberry	49,597	3,054	-	52,651
Oconee	170	-	-	170
Orangeburg	16,815	14,808	-	31,623
Pickens	-	-	-	-
Richland	42,123	8,300	-	50,423
Saluda	1,940	1,267	-	3,207
Spartanburg	1,013	26	-	1,039
Sumter	13,998	2,509	-	16,507
Union	24,008	707	-	24,715
Williamsburg	28,797	1,912	-	30,709
York	608	235	-	843
All counties	909,239	112,552	233	1,022,024

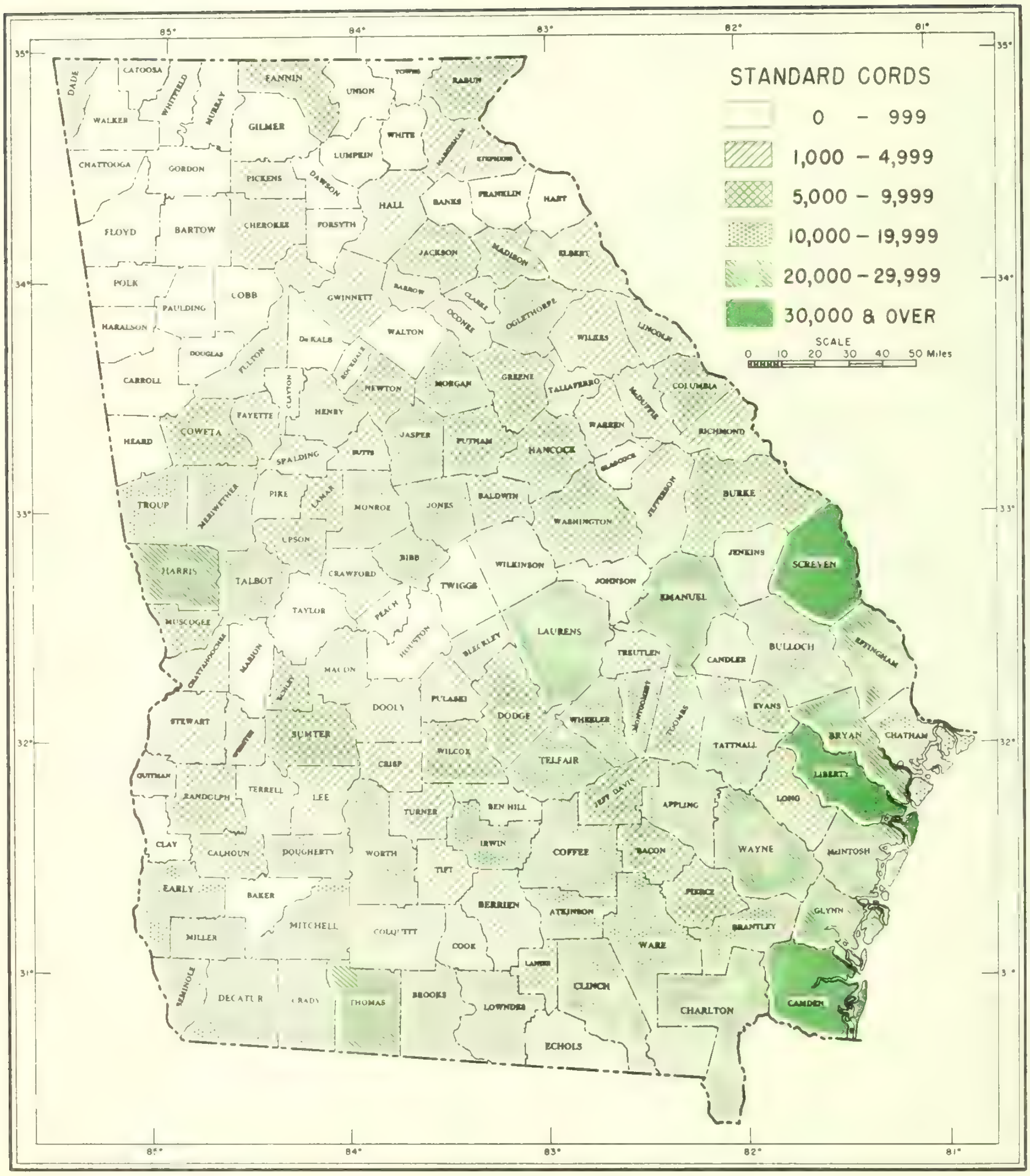

Figure 5. Pulpwood production by county in Georgia, 1946.

Table 5. - Pulpwood production by county in Georgia, 1946

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Appling	14,743	675	-	15,418
Atkinson	12,140	-	-	12,140
Bacon	8,047	337	-	8,384
Baker	-	-	-	-
Baldwin	7,768	-	-	7,768
Banks	241	-	-	241
Barrow	1,632	218	-	1,850
Bartow	806	14	-	820
Ben Hill	4,669	-	-	4,669
Berrien	3,577	82	-	3,659
Bibb	11,327	271	-	11,598
Bleckley	2,500	-	-	2,500
Brantley	13,595	1,984	-	15,579
Brooks	11,589	-	-	11,589
Bryan	20,005	1,074	-	21,079
Bulloch	15,517	204	-	15,721
Burke	5,943	2,648	-	8,591
Butts	4,920	-	-	4,920
Calhoun	7,740	-	-	7,740
Camden	42,215	3,307	-	45,522
Candler	3,772	106	-	3,878
Carroll	372	-	-	372
Catoosa	-	-	-	-
Charlton	24,746	-	-	24,746
Chatham	14,090	4,344	-	18,434
Chattahoochee	1,716	-	-	1,716
Chattooga	-	-	-	-
Cherokee	1,374	16	-	1,390
Clarke	1,514	465	-	1,979
Clay	661	-	-	661
Clayton	439	-	-	439
Clinch	10,252	23	-	10,275
Cobb	64	-	-	64
Coffee	11,532	226	-	11,758
Colquitt	3,540	-	-	3,540
Columbia	5,485	89	-	5,574
Cook	2,165	-	-	2,165
Coweta	9,617	-	-	9,617
Crawford	3,073	-	-	3,073
Crisp	1,869	-	-	1,869
Dade	-	1,145	-	1,145
Dawson	-	-	-	-
Decatur	19,660	-	-	19,660
De Kalb	67	-	-	67
Dodge	5,676	675	-	6,351
Dooly	2,423	-	-	2,423
Dougherty	11,113	-	-	11,113
Douglas	-	103	-	103
Early	17,264	-	-	17,264
Echols	4,605	-	-	4,605
Effingham	22,949	1,779	-	24,728
Elbert	2,522	-	-	2,522
Emanuel	20,814	1,026	-	21,840

Table 5. - Georgia (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Evans	5,084	556	-	5,640
Fannin	3,367	2,673	65	6,105
Fayette	2,055	-	-	2,055
Floyd	72	14	-	86
Forsyth	-	-	-	-
Franklin	784	-	-	784
Fulton	1,101	-	-	1,101
Gilmer	545	29	-	574
Glascock	-	-	-	-
Glynn	21,601	3,967	-	25,568
Gordon	985	-	-	985
Grady	12,336	-	-	12,336
Greene	8,238	89	-	8,327
Gwinnett	938	108	-	1,046
Habersham	775	242	14	1,031
Hall	1,440	40	-	1,480
Hancock	6,926	306	-	7,232
Haralson	441	-	-	441
Harris	21,293	-	-	21,293
Hart	-	-	-	-
Heard	-	-	-	-
Henry	1,746	-	-	1,746
Houston	500	-	-	500
Irwin	12,735	281	-	13,016
Jackson	5,030	-	-	5,030
Jasper	13,602	-	-	13,602
Jeff Davis	6,113	-	-	6,113
Jefferson	2,063	744	-	2,807
Jenkins	3,477	823	-	4,300
Johnson	2,929	-	-	2,929
Jones	13,083	-	-	13,083
Lamar	9,250	-	-	9,250
Lanier	5,225	-	-	5,225
Laurens	21,055	784	-	21,839
Lee	1,228	-	-	1,228
Liberty	31,490	662	-	32,152
Lincoln	1,121	-	-	1,121
Long	7,504	914	-	8,418
Lowndes	17,627	-	-	17,627
Lumpkin	-	-	-	-
Macon	2,052	-	-	2,052
Madison	7,562	154	-	7,716
Marion	367	-	-	367
McDuffie	1,500	168	-	1,668
McIntosh	24,382	1,144	-	25,526
Meriwether	13,059	-	-	13,059
Miller	15,570	-	-	15,570
Mitchell	14,043	-	-	14,043
Monroe	19,928	-	-	19,928
Montgomery	6,149	8,494	-	14,643
Morgan	17,104	157	-	17,261
Murray	28	14	-	42
Muscogee	6,250	-	-	6,250
Newton	5,487	77	-	5,564

Table 5. - Georgia (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Oconee	1,976	-	-	1,976
Oglethorpe	11,035	215	-	11,250
Paulding	-	-	-	-
Peach	-	-	-	-
Pickens	1,359	87	-	1,446
Pierce	4,976	33	-	5,009
Pike	2,000	-	-	2,000
Polk	750	-	-	750
Pulaski	1,070	-	-	1,070
Putnam	5,759	-	-	5,759
Quitman	1,384	-	-	1,384
Rabun	1,095	147	6,539	7,781
Randolph	5,223	-	-	5,223
Richmond	4,201	-	-	4,201
Rockdale	-	-	-	-
Schley	5,893	-	-	5,893
Screven	39,534	3,540	-	43,074
Seminole	11,311	-	-	11,311
Spalding	2,289	-	-	2,289
Stephens	1,990	-	-	1,990
Stewart	4,489	-	-	4,489
Sumter	5,243	-	-	5,243
Talbot	11,692	4,052	-	15,744
Taliaferro	2,404	205	-	2,609
Tattnall	12,030	212	-	12,242
Taylor	961	-	-	961
Telfair	11,928	675	-	12,603
Terrell	1,162	-	-	1,162
Thomas	22,661	-	-	22,661
Tift	4,076	-	-	4,076
Toombs	9,199	792	-	9,991
Towns	-	-	-	-
Treutlen	5,378	303	-	5,681
Troup	11,911	-	-	11,911
Turner	2,084	-	-	2,084
Twiggs	400	-	-	400
Union	-	-	-	-
Upson	7,999	-	-	7,999
Walker	-	429	-	429
Walton	-	108	-	108
Ware	15,458	226	-	15,684
Warren	2,728	-	-	2,728
Washington	9,999	-	-	9,999
Wayne	20,009	1,984	-	21,993
Webster	3,277	-	-	3,277
Wheeler	16,544	1,508	-	18,052
White	-	-	-	-
Whitfield	-	-	-	-
Wilcox	5,288	-	-	5,288
Wilkes	2,062	-	-	2,062
Wilkinson	4,458	-	-	4,458
Worth	13,907	-	-	13,907
All counties	1,078,780	57,767	6,618	1,143,165

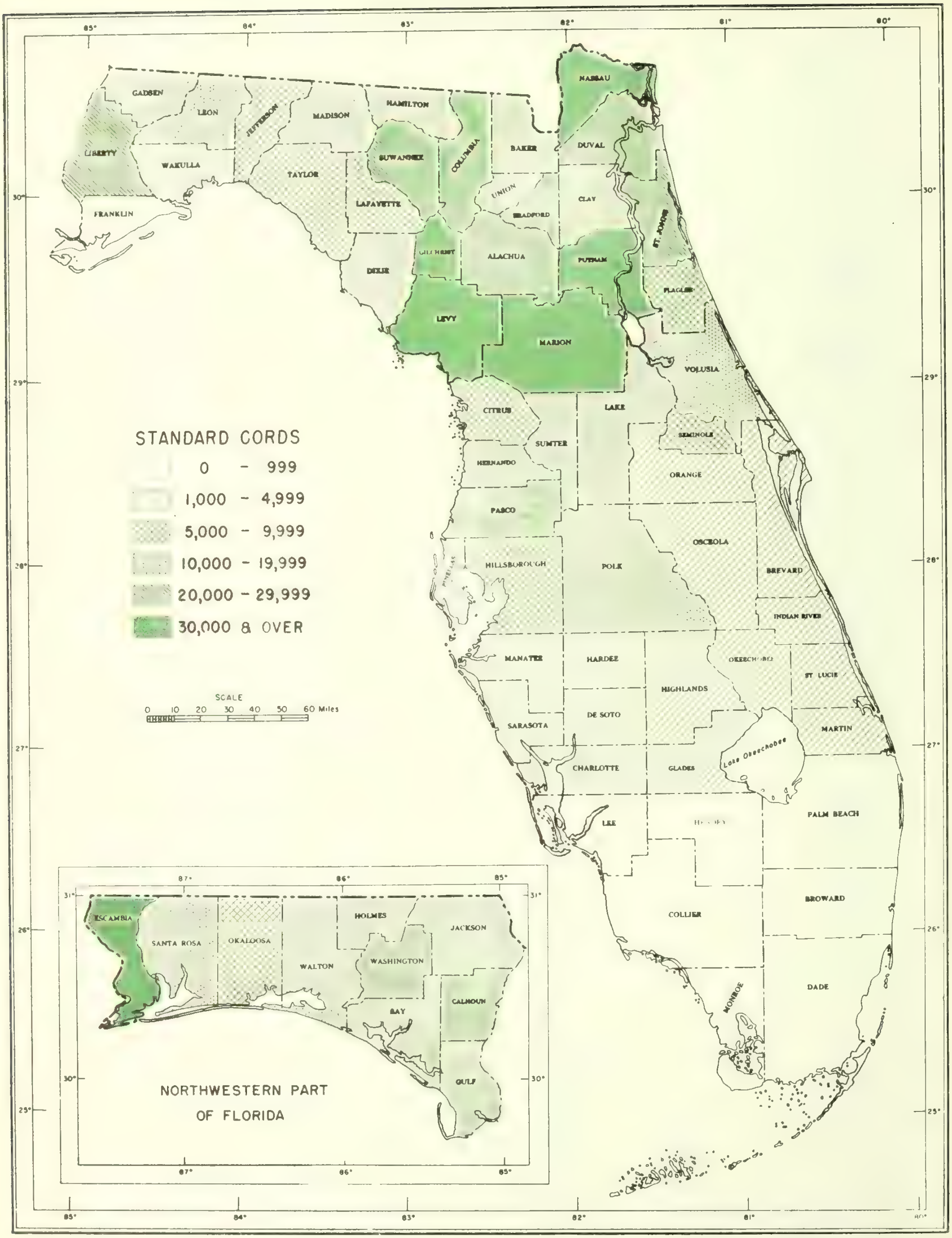

Figure 6. - Pulpwood production by county in Florida, 1946.

Table 6. - Pulpwood production by county in Florida, 1946

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Alachua	28,381	21	-	28,402
Baker	17,561	-	-	17,561
Bay	14,707	-	-	14,707
Bradford	28,982	23	-	29,005
Brevard	2,937	-	-	2,937
Broward	-	-	-	-
Calhoun	26,605	-	-	26,605
Charlotte	2,967	-	-	2,967
Citrus	8,052	-	-	8,052
Clay	13,740	-	-	13,740
Collier	-	-	-	-
Columbia	25,929	55	-	25,984
Dade	197	-	-	197
De Soto	3,764	-	-	3,764
Dixie	11,225	-	-	11,225
Duval	20,615	-	-	20,615
Escambia	34,966	3,545	-	38,511
Flagler	8,805	-	-	8,805
Franklin	-	-	-	-
Gadsden	14,877	-	-	14,877
Gilchrist	30,037	-	-	30,037
Glades	2,568	-	-	2,568
Gulf	11,324	-	-	11,324
Hamilton	10,550	-	-	10,550
Hardee	3,942	-	-	3,942
Hendry	-	-	-	-
Hernando	11,305	-	-	11,305
Highlands	2,567	-	-	2,567
Hillsborough	8,267	-	-	8,267
Holmes	12,000	-	-	12,000
Indian River	2,567	-	-	2,567
Jackson	17,565	-	-	17,565
Jefferson	5,516	-	-	5,516
Lafayette	9,418	-	-	9,418
Lake	13,848	-	-	13,848
Lee	14	-	-	14
Leon	13,628	-	-	13,628
Levy	33,410	-	-	33,410
Liberty	26,737	-	-	26,737
Madison	15,606	-	-	15,606
Manatee	3,408	-	-	3,408
Marion	38,953	-	-	38,953
Martin	2,600	-	-	2,600
Monroe	-	-	-	-
Nassau	45,705	28	-	45,733
Okaloosa	9,772	-	-	9,772
Okeechobee	2,567	-	-	2,567
Orange	3,509	-	-	3,509
Osceola	2,922	-	-	2,922

Table 6. - Florida (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Palm Beach	193	-	-	193
Pasco	20,018	-	-	20,018
Pinellas	3,437	-	-	3,437
Polk	14,047	-	-	14,047
Putnam	34,468	-	-	34,468
St. Johns	28,540	-	-	28,540
St. Lucie	2,567	-	-	2,567
Santa Rosa	19,031	-	-	19,031
Sarasota	2,582	-	-	2,582
Seminole	9,113	-	-	9,113
Sumter	15,004	-	-	15,004
Suwannee	28,850	-	-	28,850
Taylor	7,184	-	-	7,184
Union	12,091	-	-	12,091
Volusia	15,528	-	-	15,528
Wakulla	3,487	-	-	3,487
Walton	14,736	-	-	14,736
Washington	26,004	-	-	26,004
All counties	861,495	3,672	-	865,167

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SOUTHERN PULPWOOD PRODUCTION AND THE TIMBER SUPPLY

by
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FOREST SERVICE
U S
DEPARTMENT OF AGRICULTURE

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA

I.T. HAIG, Director

PREFACE

Through the McSweeny-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act, and each of the eleven Regional Forest Experiment Stations is responsible for the work in its territory. In the Middle Atlantic States the Forest Survey is an activity of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth. Determination of the current rate of timber growth.

3. Drain. Determination of the amount of industrial and domestic wood used, and the total loss resulting from fire, insects, disease, suppression, and other causes.

4. Requirements. Determination of the current and probable future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

This progress report examines the timber resources of the South from the viewpoint of the rapidly expanding pulp and paper industry, calls attention to the steady decline in volume of southern pines, which are at present the principal pulping species, and suggests measures for bringing wood supplies and requirements into balance.

SOUTHERN PULPWOOD PRODUCTION AND THE TIMBER SUPPLY[1]

by

James W. Cruikshank[2]

The southern pulp and paper industry is again on the march. Practically as soon as the war was over several plants started expansion programs, and construction was started on a number of new mills. Investigations and surveys now under way also indicate that additional new pulp and paper mills can be expected to locate in the South in the near future. This is not news to you members of the industry, but it does point up the need for a review of the South's timber supply in order to see if annual yields of wood are large enough to meet present requirements and at the same time allow for some new plant capacity. Also, since the timber lands of the South are growing much less wood than they are capable of producing, it should be worthwhile to consider briefly some of the causes of low production and the yields that might be attainable under good forest practices.

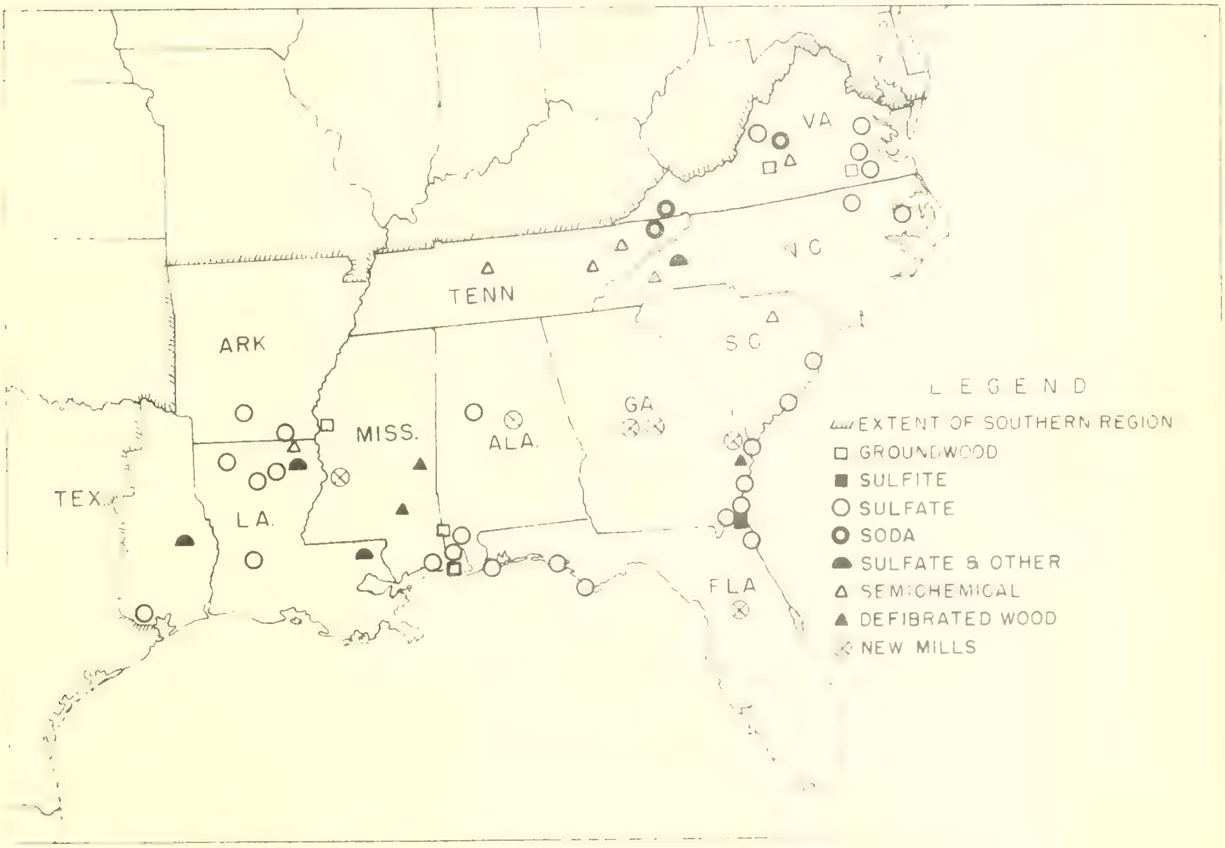
PULPWOOD PRODUCTION

Before discussing the timber supply situation, I would like to briefly review the status of the pulp industry in the South, with particular emphasis upon its present and immediate future needs for pulpwood. In 1946 there were 50 wood-pulp mills in the South with a total daily capacity of about 16,200 tons of pulp, about one-half the total U. S. pulpmill capacity. Slightly over 80 percent of this capacity was utilized for the production of kraft pulp, about 10 percent for ground wood, and the remaining 10 percent for semi-chemical, soda, and sulphite fiber. Since 1946 at least ten companies have undertaken expansion programs designed to increase production at over one-fourth of the pulpmills.

1/ Presented at the meeting of the Southern Pulpwood Conservation Association, Atlanta, Ga., Jan. 28, 1948.

2/ Chief, Division of Forest Economics, Southeastern Forest Experiment Station.

It is difficult to appraise accurately the net effect of these expansions in terms of increased capacity, but it is probably safe to say they approximate four or five large new mills. In the same period, construction has started, or is definitely planned, on seven new mills (fig. 1), one of which will produce newsprint, two building board, and the rest kraft products.



DISTRIBUTION AND TYPES OF PULP MILLS IN THE SOUTH, AND NEW MILLS UNDER CONSTRUCTION, 1947

Figure 1

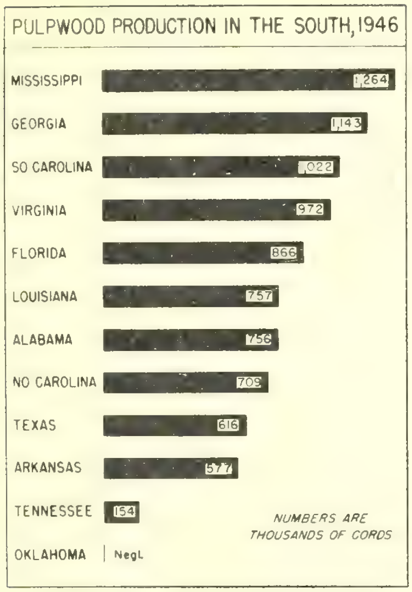


Figure 2

Even before this general postwar expansion, pulpwood production in the South had been gradually increasing. In 1940 total production amounted to 6.3 million cords, but in spite of occasional setbacks in certain war years it rose to 8.8 million cords by 1946, an increase of 40 percent. The proportionate increase was greatest in Texas where production was increased from 262,000 cords in 1940 to 616,000 in 1946, but Mississippi, Alabama, Georgia, and South Carolina also experienced rapid gains. Almost one-half of the pulpwood produced was cut in these latter four states with three of them yielding over one million cords each. (fig. 2).

Estimates of 1947 pulpwood production are not available, but reports for the first nine months indicate that production should closely approach that of 1946. In 1948 and 1949 requirements for pulpwood will gradually increase as expansion programs are completed and new mills come into production. The additional amount of wood needed cannot be estimated precisely, but on the basis of increased capacity so far announced it appears that expansions in present mills will require about 1.3 million cords and new mills will need about 1.2 million cords, in both cases chiefly pine timber. Thus, by 1950 total pulpwood production in the South can be expected to exceed 11 million cords annually. This is nearly a 30-percent increase above 1946 and new mills, as yet unannounced, may cause further increases.

The impact of this increased production will be greatest on the forests of the Southeast, as six of the seven new plants now under construction will draw wood from South Carolina, Georgia, Florida, or Alabama. Also, about 40 percent of the wood requirements for the increased capacity now being added to existing plants will come from this same general area. Without question this will greatly intensify competition for pulpwood along the coast of South Carolina and Georgia, and in northeast Florida where the annual cut of pulpwood alone now approximates one-tenth cord per acre of commercial forest.

It appears, therefore, that the demand for pulpwood can be expected to increase markedly during the next few years and this demand will be largely concentrated in the Southeast. Also, there is a strong possibility that additional pulpmills may be established in this and other parts of the south that will further increase the consumption of pulpwood. Inasmuch as these new requirements will generally be superimposed upon the timber needs of the lumber and other wood-using industries, the question of the adequacy of the South's timber supply assumes real importance.

THE TIMBER SUPPLY

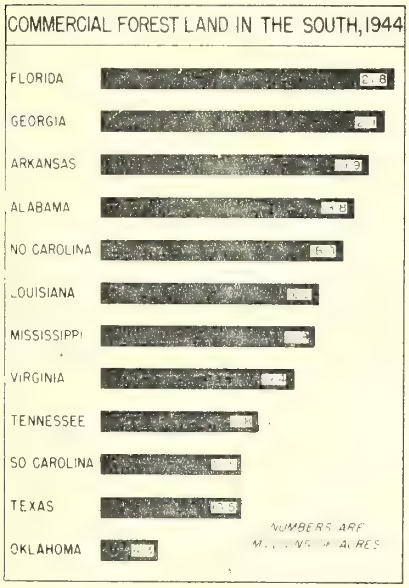


Figure 3

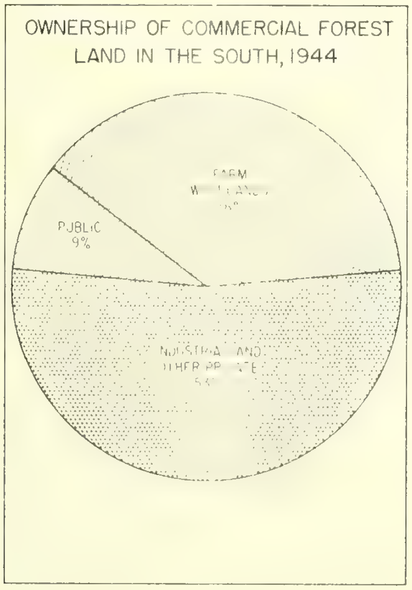


Figure 4

The timber supply upon which your industry depends is distributed rather thinly over 183 million acres, which is 56 percent of the land area in the South. No state, with the exception of Texas and Oklahoma, has less than 40 percent of its area in commercial forest, and Florida has over 60 percent. Every state except Oklahoma has over 10 million acres of commercial forest land, and Florida and Georgia each has over 20 million (fig. 3).

Among the major forest regions of the nation only two, the Central States and New England, exceed the South in the proportion of commercial forest land held in private ownership. Some 69 million acres are on farms, nearly 8 million are owned by the pulp and paper industry, and about 90 million are in other classes of industrial and private ownership. Only 9 percent is in public ownership (fig. 4), and 10 of these sixteen million acres are in National Forests. Privately-owned timber lands are, therefore, your major source of wood, but the point to remember is that nearly three-fourths of the private forest land is held by 1.6 million small owners in tracts averaging only 70 to 75 acres in size. Since there is relatively little intensive forest management on these small properties, timber yields over much of the South are unnecessarily low.

So far, we have said little about the characteristics of the timber resources of the South, so let us consider briefly the kinds of timber and their general location. Bordering the Atlantic and Gulf coasts from South Carolina to east Texas is the longleaf-slash pine forest of

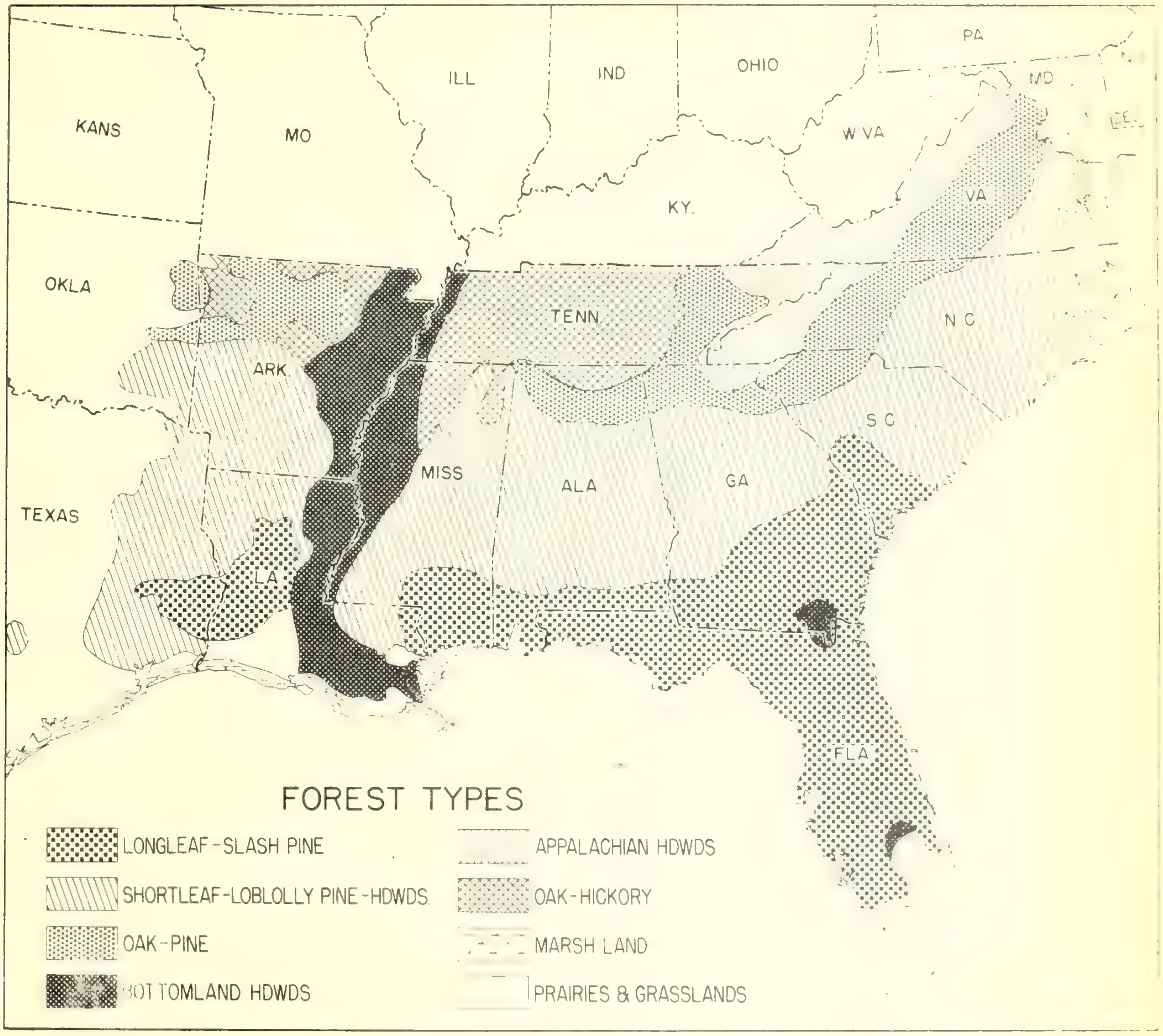


Figure 5

the flat coastal plain (fig. 5). It occupies nearly 35 million acres, two-thirds of which are in Florida and South Georgia. Loblolly pine is the leading species on the coastal plain of the Carolinas and Virginia, with shortleaf pine the dominant tree farther inland on the Piedmont. Virginia pine mingles with hardwoods in the eastern foothills of the Appalachians and forms a belt across Virginia and the Carolinas which extends on into North Georgia and Alabama. The rolling hills of Georgia, Alabama, Mississippi, Louisiana, and Texas are clothed with a mixed loblolly-shortleaf-hardwood forest. Loblolly pine in mixture with hardwoods is prevalent in southwest Arkansas, but in the mountainous part of the state it is replaced by shortleaf. Tennessee is

chiefly a hardwood state, although a narrow belt of pine extends along the western edge of the Appalachians into Kentucky. All together there are nearly 70 million acres of this loblolly-shortleaf-hardwood forest. Less important from a pulpwood standpoint are the Appalachian hardwoods, the scattered stands of upland hardwoods intermixed with pine, the bottomland hardwoods along the major rivers, and the Delta hardwoods of the Mississippi flood plain.

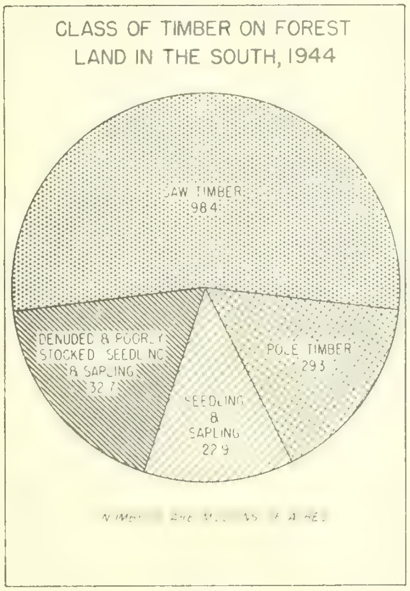


Figure 6

The present condition of the timber stands reflects a history of inadequate fire protection and poor or destructive cutting practices balanced in part by the South's natural advantages in climate and soil, which stimulates the reproduction and growth of trees. Second-growth saw timber and pole timber have restocked 128 million acres (70 percent) of the forest land, but probably not over one-fourth of these stands are fully stocked. Seedling and sapling stands with more than 40 percent stocking occupy 23 million acres (fig. 6), but there are an additional 33 million acres that are either denuded or bear less than a 40-percent stocking of young trees. Thus, at the present time about 18 percent of the South's forest land is growing scarcely any timber. Putting this land back into timber production will go a long way toward providing the wood needed by expanding industries. The need is particularly acute in Florida, where 43 percent of the forest land is in this condition.

For the South as a whole, the average stand per acre of all sound trees 5.0 inches d.b.h. and larger is about 4.5 standard cords of pine and 6.0 cords of hardwood. Florida, with its large area of poorly-stocked timberlands, has only 2.7 cords of pine per average acre, while east Texas leads with slightly over 8.

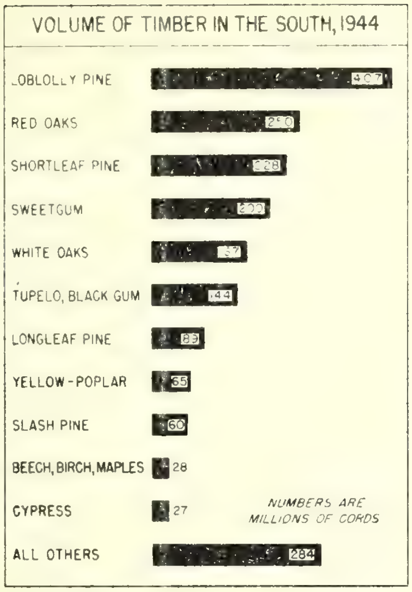


Figure 7

The total stand of all species amounts to 1.9 billion cords. Softwoods, chiefly the southern yellow pines, total 833 million cords, nearly one-half loblolly pine (fig. 7). The 1.1 billion cords of hardwoods run heavily to the smaller-sized trees, as hardwood saw timber totals only 144 billion board feet compared to 194 billion board feet of pine. A large part of the hardwood volume is in the various species of oak which are not generally favored as pulping woods. However, almost one-third is sweetgum, blackgum, and tupelo — species which are used to a small extent in many southern pulpmills and which have a total volume greater than the combined volume of shortleaf and longleaf pine.

To the uninitiated, a wood resource of nearly two billion cords might seem ample to support all present industries and those foreseeable in the near future. I am sure you all realize, however, that industry, to be permanent, must depend upon the annual growth of wood, and at the present time this is only 50 million cords of softwoods and 44 million cords of hardwoods. Thus, in the South as a whole, the forests are growing about one-half cord per average acre per year, but only one-quarter of a cord of the desired softwoods. For comparison, you will recall I mentioned earlier that in parts of the Southeast the annual cut of pine pulpwood alone is one-tenth cord per acre per year.

This leads us to a consideration of timber drain, i.e., the amount of timber that is lost each year through such destructive agencies as fire, insects, disease, and windstorms, and the amount that is cut for conversion into useful products. The first of these, the wood lost through mortality, amounts to 13 million cords annually and could be largely eliminated under intensive forestry practices. Efforts to eliminate a large proportion of this loss justify considerable outlay, as the volume now lost each year is nearly 50 percent more than the 1946 cut of pulpwood.

The amount of timber cut for the various forest products has kept pace with the growth of our second-growth forests and in some areas has exceeded it. It is true that a considerable number of large sawmills have closed down in recent years, but their place has usually been taken by numerous portable mills. In 1946, for example, we found 30 percent more sawmills in four states of the Southeast than in 1942, and North Carolina alone contained over five thousand sawmills. There are indications that the cut of fuelwood is decreasing as home-owners and tobacco growers convert to coal and gas and as greater use is made of sawmill waste.

Meanwhile pulpwood production climbs and other products are being produced in increasing quantities. This is as it should be, for the timber resource of the South is one of its greatest raw materials, but care must be taken not to kill the goose that lays the golden egg. In 1944, the last year for which complete records are available, the total amount of wood cut from southern forests amounted to 46 million cords of softwoods and 36 million cords of hardwoods. Thus, the total drain upon the forests was 95 million cords, or about one million more than the growth. It was distributed by causes as shown in figure 8.

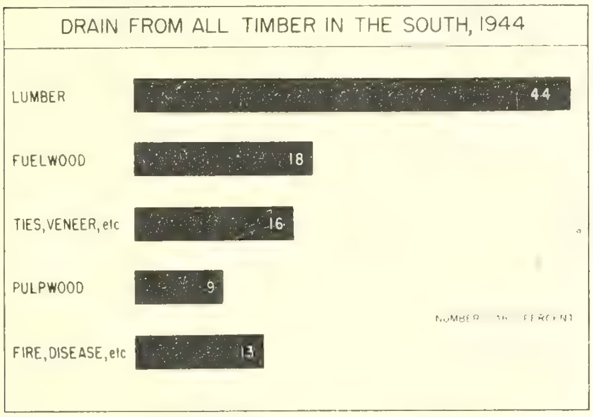


Figure 8

Although growth and drain of the total growing stock were in approximate balance in 1944, the situation is not entirely favorable for your industry. Both softwood and hardwood saw timber decreased over two billion board feet in 1944 (fig. 9), and with declining supplies of suitable saw timber the small portable mills intensify their competition for six- and eight-inch trees. Also, drain on the entire softwood growing stock was 2.6 million cords (fig. 10) greater than growth, while hardwood drain was 1.8 million cords less than growth. Since these differences represent the trend for at least the past decade, the effect is to build up the quantity of small hardwoods and reduce the volume of softwoods -- the species upon which you pretty largely depend.

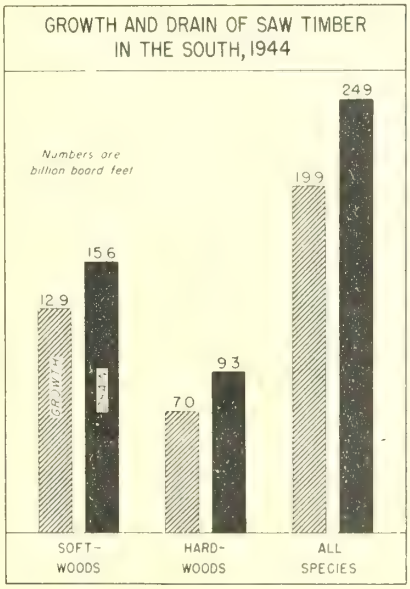


Figure 10

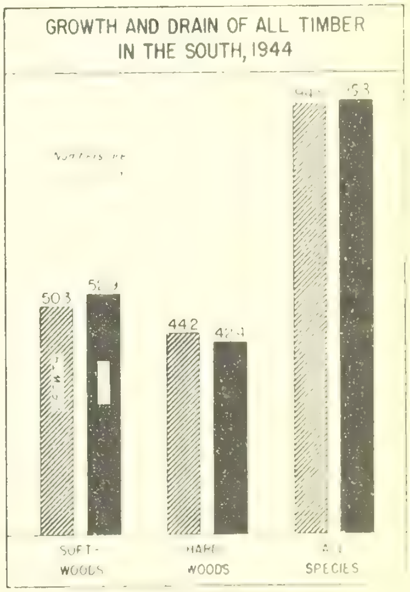


Figure 9

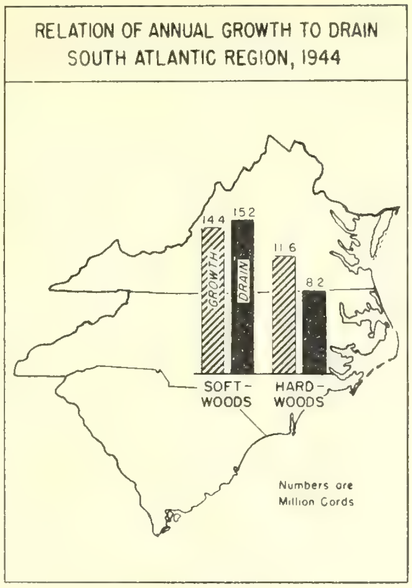

RELATION OF ANNUAL GROWTH TO DRAIN
SOUTH ATLANTIC REGION, 1944

Figure 11

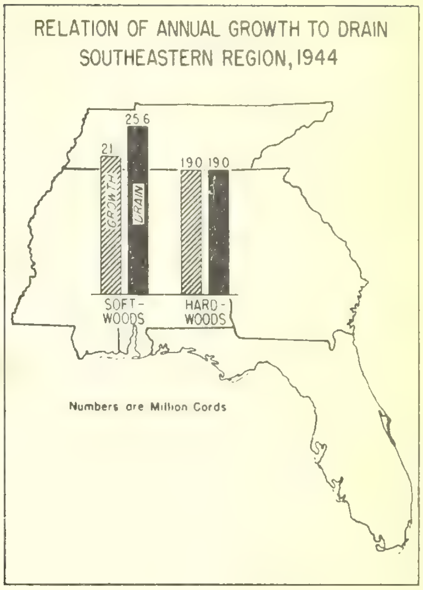

RELATION OF ANNUAL GROWTH TO DRAIN
SOUTHEASTERN REGION, 1944

Figure 12

There are differences, of course, within the various regions of the South. The South Atlantic region (fig. 11), composed of the Carolinas and Virginia, follows the South-wide trend with softwood drain slightly exceeding growth and hardwood drain 3.5 million cords less than growth. In the Southeastern region (fig. 12), softwood drain was 4.5 million cords more than growth, but the hardwoods were in balance. The general trend is reversed in the west Gulf region (fig. 13), where softwood growth exceeded drain by 2.7 million cords in 1944 and hardwood drain exceeded growth.

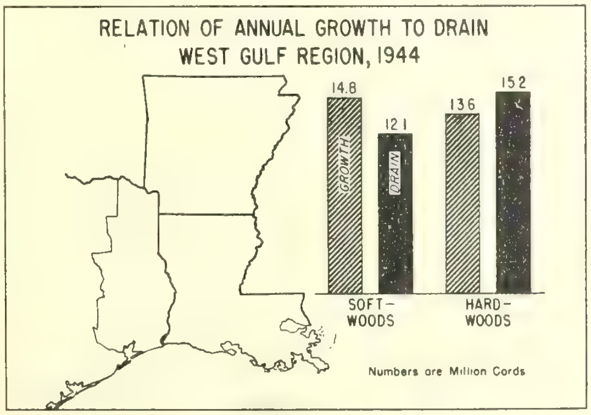

RELATION OF ANNUAL GROWTH TO DRAIN
WEST GULF REGION, 1944

Figure 13

So far, this discussion of growth and drain has been based largely upon the changes in one year. What has happened over a longer period? The original Forest Survey provided us with estimates of timber volumes in all of our states except Tennessee. The date of these state surveys varies from 1932 in Mississippi to 1940 in Virginia. In 1945 the Forest Service, in cooperation with the American Forestry Association and State Forestry agencies, completed another extensive check of the timber resources of the South. This survey admittedly does not compare in accuracy with the original Forest Survey, but it does furnish an indication of trends that are enlightening. For instance, the total pine-growing stock has decreased

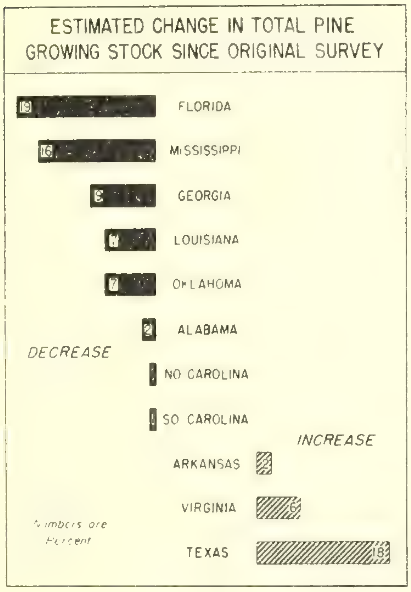


Figure 14

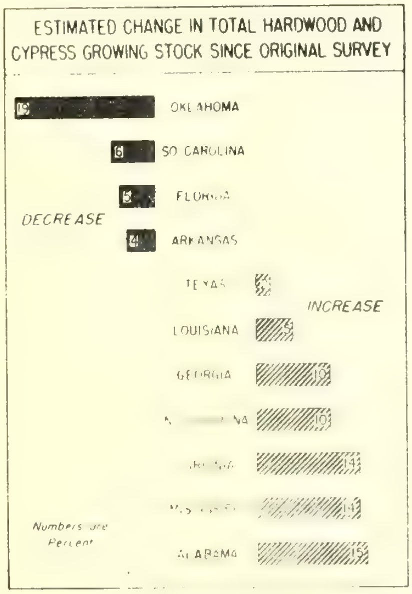


Figure 15

in all but three states, with Florida experiencing the largest reduction (fig. 14). Mississippi also has suffered a noticeable decline in pine timber. East Texas bears out predictions made at the time of the original survey and now has nearly twenty percent more pine, despite the addition of two large pulpmills in the meantime.

In the case of the hardwoods and cypress, the situation is practically reversed. Only four states have experienced a reduction in volume, with the major loss occurring in Oklahoma (fig. 15). Increases in the other states range up to 15 percent in Alabama.

Regional and state analyses fail to point up local situations that are really the major interest of all of you. I will not touch upon these except to give you the preliminary results of the resurvey the Forest Survey has just completed in a group of nine coastal counties in South Carolina, extending from Savannah to Georgetown. This area was surveyed originally about twelve years ago, and during that period the volume in pine trees 5.0 inches d.b.h. and larger has decreased about 10 percent, while that in hardwoods and cypress has increased about 15 percent. Saw timber of all species has decreased. This exemplifies the timber situation in the South today; a fairly consistent decline in the volume of trees of saw-timber size and in pine trees of all merchantable sizes; a marked rise in the volume of small hardwoods.

FUTURE POSSIBILITIES

In view of the present situation is it reasonable to assume that the South can support additional forest industrial capacity? I believe it is, providing we recognize the problems to be overcome and take aggressive action to solve them.

The most difficult period confronting us is in the immediate years ahead, as total drain now exceeds growth and wood requirements are increasing. In the face of this we need to increase the growth, and this can be done only through the slow process of building up our timber stands. Thus, we are caught between two horns of a dilemma; on the one hand cut more timber to supply industry, on the other leave more to grow.

There is no entirely satisfactory solution to this, but there should be no argument that we need to begin immediately a much more widespread application of better forestry practices, including protection, thinnings, selective cutting, and planting. Results, in the form of larger yields of timber, will be relatively slow, so there is need for other measures that will help to tide us over the next few decades.

These might include reducing the volume lost through mortality by more intensive protection and cutting practices that would salvage trees killed as a result of fire, wind, insects, disease, or suppression. Intensive efforts along this line might result in saving ten percent, or 1.3 million cords, of the wood now lost each year. Secondly, there are at least 300 million cords of sound wood in cull trees. If only 3 percent of this were cut each year, it would amount to 9 million cords. Part of the pine and gum could be used for pulpwood, but if necessary all of it could be cut into fuelwood, thus reducing the 30-million-cord annual fuelwood drain on sound trees. A third source of wood lies in reducing and making more effective use of logging and manufacturing waste that amounts to the equivalent of 26 million cords annually. Obviously, it is impossible to utilize all of this, but if only 10 percent were saved, we would have 2.6 million cords more wood. The net effect of these savings would be to eliminate the present drain deficit and increase our wood supply by 12 million cords annually (fig. 16).

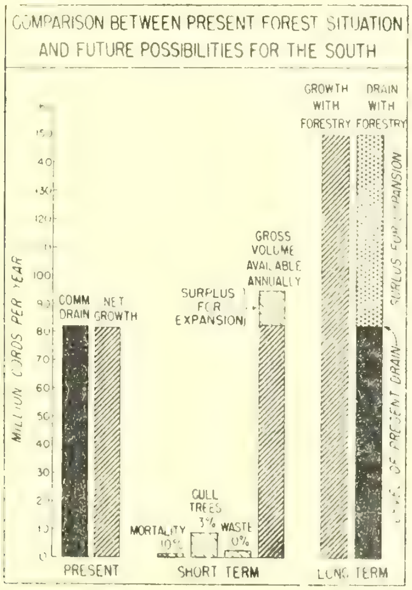


Figure 16

If these measures were put into effect, they would reduce the pressure upon the existing sound-tree growing stock and allow the South time to increase the timber growth substantially by a widespread application of good forestry practices. Most of you are familiar with the job to be done. It includes bringing on-the-ground assistance to the 1.6 million small forest owners, establishment of adequate fire protection (at present one-half of the forest land receives either poor protection or none), reducing the eight-million-cord annual loss due to insects and disease, planting some part of the 33 million acres now poorly stocked or denuded, and general adoption of conservative cutting practices on that 60 percent of all land which is now subject to poor or destructive cutting. It is estimated that within 50 years measures such as these would increase the annual yield to 150 million cords, providing a surplus for expansion of nearly 70 million cords. Surely such a goal is worth striving for.

FOREST SURVEY REPORTS PUBLISHED BY SOUTHEASTERN FOREST EXPERIMENT STATION

Forest Survey Releases

No. 1 - Forest Resources of the Northern Coastal Plain of South Carolina. 1939

No. 2 - Forest Resources of the Piedmont Region of South Carolina. 1939

No. 3 - Forest Resources of the Southern Coastal Plain of South Carolina. 1939

No. 4 - Forest Resources of the Southern Coastal Plain of North Carolina. 1940

No. 5 - Forest Resources of the Northern Coastal Plain of North Carolina. 1940

No. 6 - Forest Resources of the Piedmont Region of North Carolina. 1940

No. 7 - Forest Resources of the Mountain Region of North Carolina. 1941

No. 8 - The Distribution of Commercial Forest Trees in North Carolina. 1941

No. 9 - The Distribution of Commercial Forest Trees in South Carolina. 1941

No. 10 - The Distribution of Commercial Forest Trees in Virginia. 1942

No. 11 - Virginia's Forests. 1942

No. 12 - The Forest Situation in the Coastal Plain of Virginia. 1943

No. 13 - The Forest Situation in Piedmont Virginia. 1943

No. 14 - Preliminary Estimate of 1942 Lumber Production in the Carolinas, Virginia, West Virginia, Kentucky, and Tennessee. 1943

No. 15 - The Forest Situation in the Mountain Region of Virginia. 1943

No. 16 - Wartime Lumber Production in the Appalachian Hardwood Region, January 1942-June 1944. 1944

No. 17 - Wood Waste Available for Conversion to Ethyl Alcohol in the Columbia Area of South Carolina. 1944

No. 18 - North Carolina Forest Growth and Drain, 1937-1943. 1945

No. 19 - Approximate Forest Area and Timber Volume by County in the Carolinas and Virginia. 1945

No. 20 - South Carolina Forest Growth and Drain, 1936-1943. 1945

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia. 1946

No. 22 - Southern Forests as a Source of Pulpwood. 1947

No. 23 - 1946 Pulpwood Production by County in the Southeast. 1947

No. 24 - Southern Pulpwood Production and the Timber Supply. 1948

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina. 1948

No. 26 - 1946 Commodity Drain by County from South Carolina Forests. 1948

USDA Miscellaneous Publications

No.533 - North Carolina Forest Resources and Industries. 1944

No.552 - South Carolina Forest Resources and Industries. 1944

FOREST SURVEY RELEASE NO. 25
MARCH 1, 1948

FOREST RESOURCES OF THE LOWER COASTAL PLAIN OF SOUTH CAROLINA

by

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SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA
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In cooperation with
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COLUMBIA, SOUTH CAROLINA
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PREFACE

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through Regional Forest Experiment Stations. In the Southeastern States the Forest Survey is an activity in the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina, and its work is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.
2. Growth. Determination of the current rate of timber growth.
3. Drain. Determination of the amount of industrial and domestic wood removed from the growing stock and the loss resulting from fire, insects, disease, suppression, and other causes.
4. Requirements. Determination of the current and probable future requirements for all classes of forest products.
5. Analysis. Analysis of the relation of Survey findings to one another and to other economic factors as a basis for public and private policies regarding forest land use and management.

South Carolina was covered by the original Forest Survey in the period 1934-36, and reports presenting its findings have been published. Since then an effort has been made to keep the original inventory up to date by balancing annual growth against timber drain, but better fire protection, better forest management, more intensive use, and other factors have caused changes in the forest growing stock that can only be measured accurately by on-the-ground resurveys. This progress report presents the results of such a resurvey in the lower Coastal Plain of South Carolina, where the field work was done between November, 1946, and March, 1947. Similar reports on the timber inventory of the upper Coastal Plain and Piedmont will be issued as the field and office work is completed. For a description of methods and accuracy, see the Appendix.

Field Party

M. B. Bryan, Supervisor; F. A. Bennett R. W. Cooper; N. F. Force; J. H. Davidson; D. W. Warner; H. R. Scott.

TABLES FOR THE UNIT

AREA

1. Gross area by broad use class, 1947
2. Ownership of all land, 1947
3. Ownership of all private properties of 1,000 acres or more, 1946
4. Ownership of commercial forest land, 1947
5. Commercial forest area by forest type and stand-size class, 1947

NET VOLUME OF ALL TREES

6. By species group and class of material, 1947
7. By species group and diameter class, 1947
8. By forest type and stand-size class, 1947

NET VOLUME OF POLE-TIMBER TREES

9. By species group and diameter class, 1947
10. By forest type and stand-size class, 1947

NET VOLUME OF SAW TIMBER

11. By species group and diameter class, 1947
12. By forest type and stand-size class, 1947
13. By stand-size class and diameter class, 1947

AVERAGE VOLUME PER ACRE

14. Of all trees, by forest type and stand-size class, 1947
15. Of pole-timber trees, by forest type and stand-size class, 1947
16. Of saw timber, by forest type and stand-size class, 1947

TABLES FOR COUNTIES

17. County area by broad use class, 1947
18. Ownership of all land, by county, 1947
19. Ownership of all commercial forest land, by county, 1947
20. Net volume of all trees by pulping preference species and tree-diameter groups, by county, 1947
21. Net volume of saw timber by species group and county, 1947
22. Net volume of saw timber by broad species and tree-diameter groups, by county, 1947

CHANGE IN TIMBER VOLUME SINCE THE ORIGINAL SURVEY

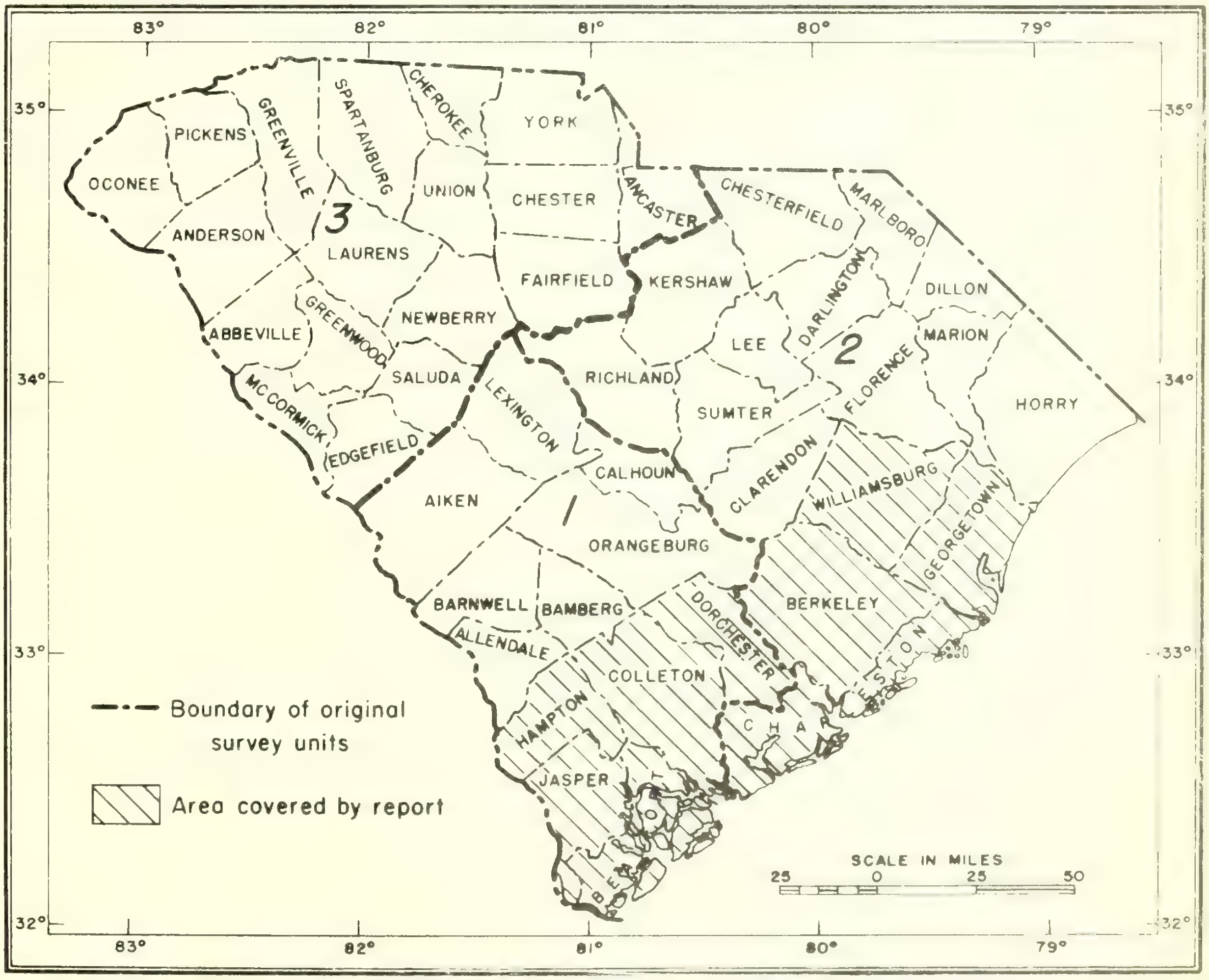
Decreased	
Pine saw timber	14 percent
Hardwood and cypress saw timber	22 percent
Pines 5.0 inches d.b.h. and larger	15 percent
Increased	
Hardwood and cypress 5.0 inches d.b.h. and larger	22 percent

The original Forest Survey was made in the lower Coastal Plain of South Carolina about twelve years ago. Since then some of the best hardwood timberland has been flooded by waters of the Pinopolis Reservoir, furniture and veneer plants have increased their requirements for good-quality hardwoods, and large pulpmills have been built at Charleston and Georgetown. In addition, new pulpmills in Georgia and North Carolina have added to the demand for pulpwood. All of this, superimposed upon a high level of lumber production, has caused a reduction in all classes of timber except the hardwoods and cypress of less than saw-timber size.

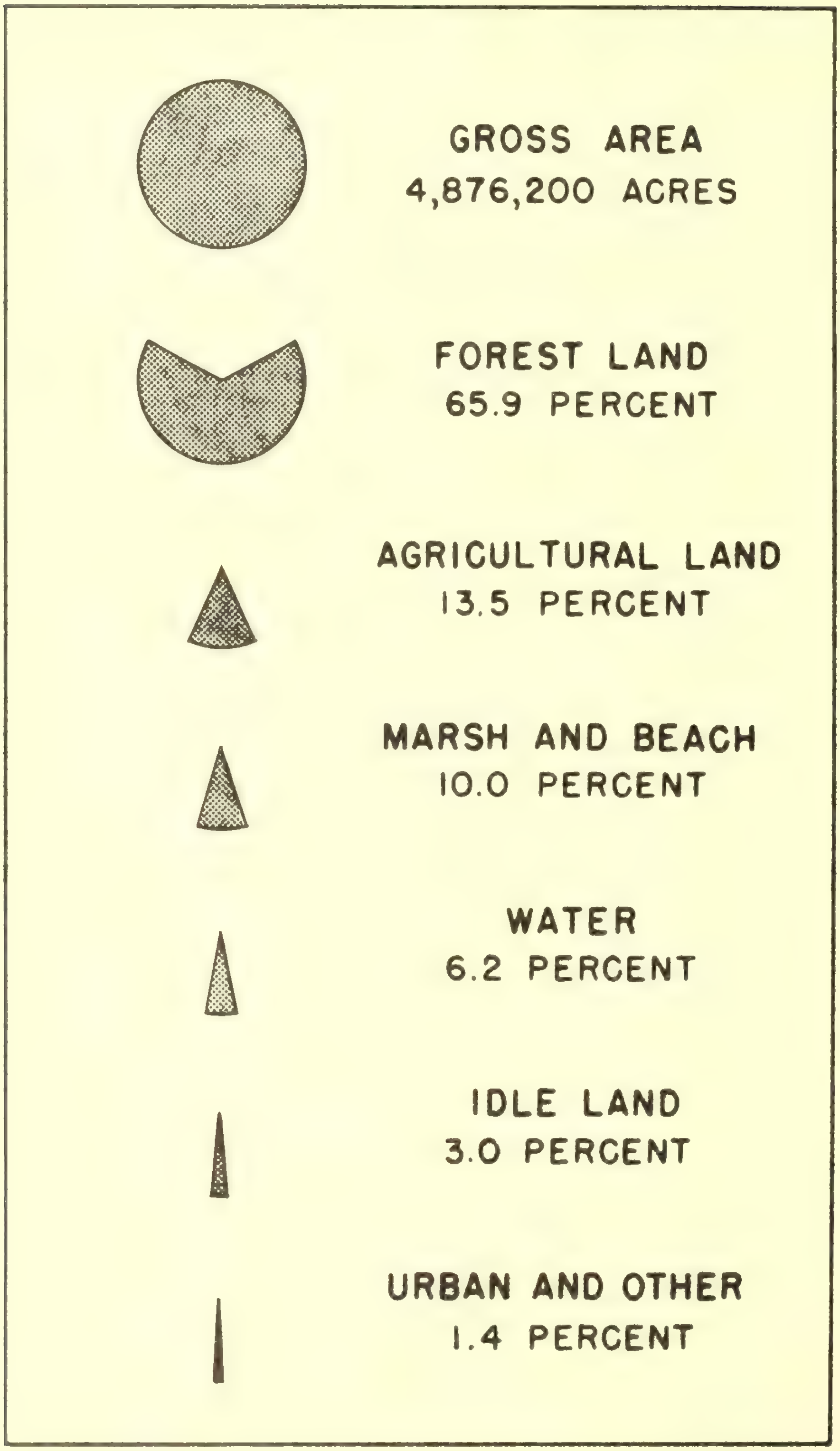
The above percentage changes are based upon a comparison of the original Forest Survey inventory in nine counties of the lower Coastal Plain with a new inventory obtained by resurvey in early 1947. For the purpose of this comparison, the original survey definition of hardwood saw timber (trees 13 inches d.b.h. and larger) has been used. Elsewhere in this report, saw-timber volumes include the board-foot contents of hardwoods 11 to 13 inches d.b.h., as well, to accord with the closer utilization practices now prevailing. However, certain other changes of definition which could not be adjusted tend to reduce the validity of the comparison, and the adoption of new form-class volume tables for the 1947 survey introduces the possibility of additional differences. For these reasons, the values given should be considered only as approximations of the actual changes.

FOREST RESOURCES OF THE LOWER COASTAL PLAIN OF SOUTH CAROLINA

The area covered by this report consists of the nine counties of Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Hampton, Jasper, and Williamsburg. About one-half the area, bordering the ocean, lies in the flatwoods, where elevations seldom exceed 50 feet above sea-level. The remainder of the area lies at elevations ranging up to about 200 feet, with slightly more pronounced relief. The total area is 4,876,200 acres, of which 3,215,500 acres are forested. Loblolly pine is the leading tree species. The net volume of saw timber, of all species, is 10.9 billion board feet. The volume of both pole-timber and saw-timber trees is 47.8 million cords, 47 percent softwood.



The area includes parts of original South Carolina Survey Units 1 and 2



Sixty-six percent of the gross area of the unit is forest land.

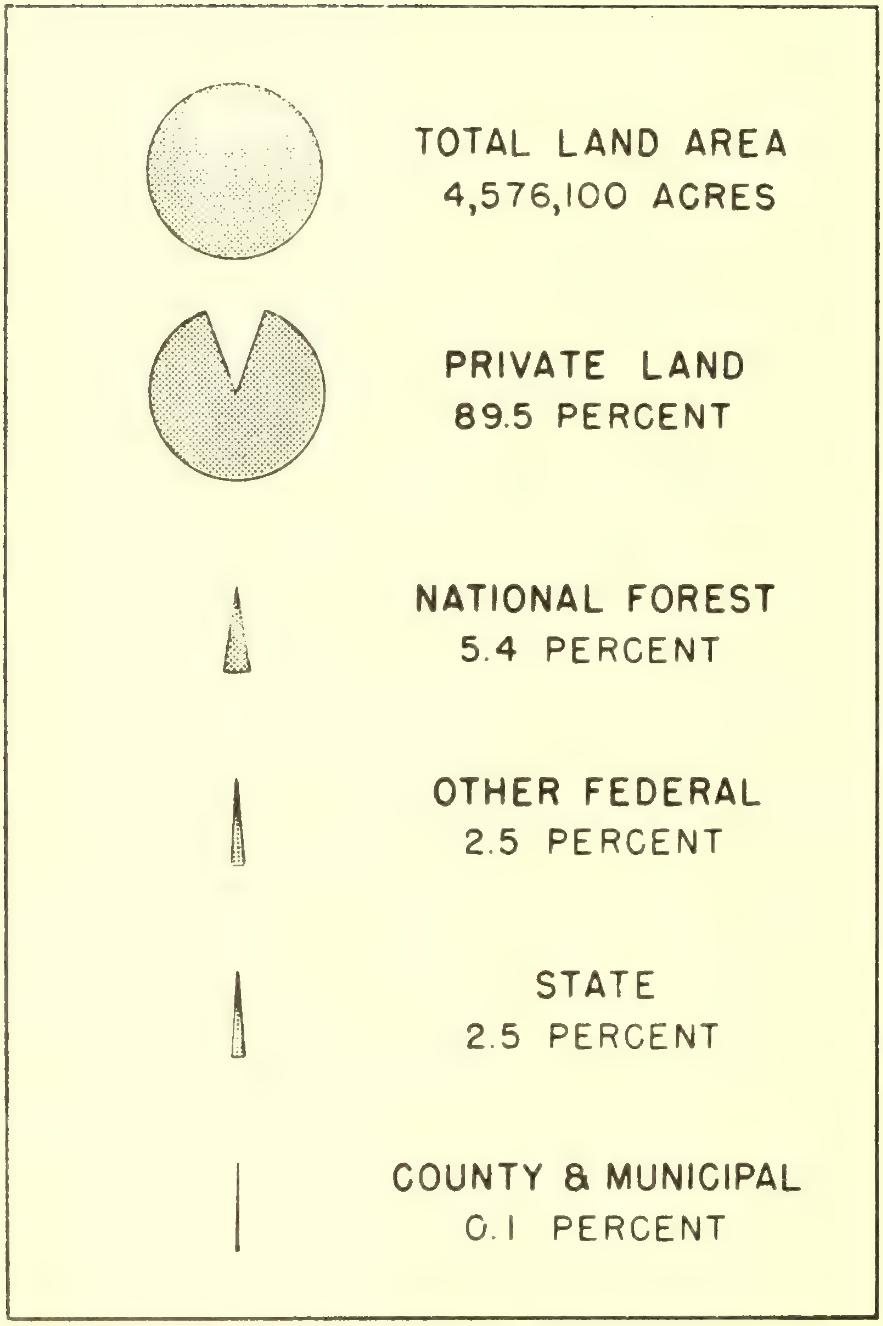
Table 1. - Gross area[1] by broad use class, 1947

Class of use	Area	
	Acres	Percent
Forest:		
Commercial	3,205,100	65.7
Withdrawn	8,600	0.2
Non-productive	1,800	2/
Total forest	3,215,500	65.9
Non-forest:		
Idle	148,200	3.0
Agriculture	656,100	13.5
Marsh	465,000	9.5
Dune and beach	23,000	0.5
Urban and other[3]	68,300	1.4
Total non-forest	1,360,600	27.9
Total land	4,576,100	93.8
Total water	300,100	6.2
All classes	4,876,200	100.0

1/ From Area of the United States, 1940, Bureau of the Census.

2/ Less than 0.05 percent.

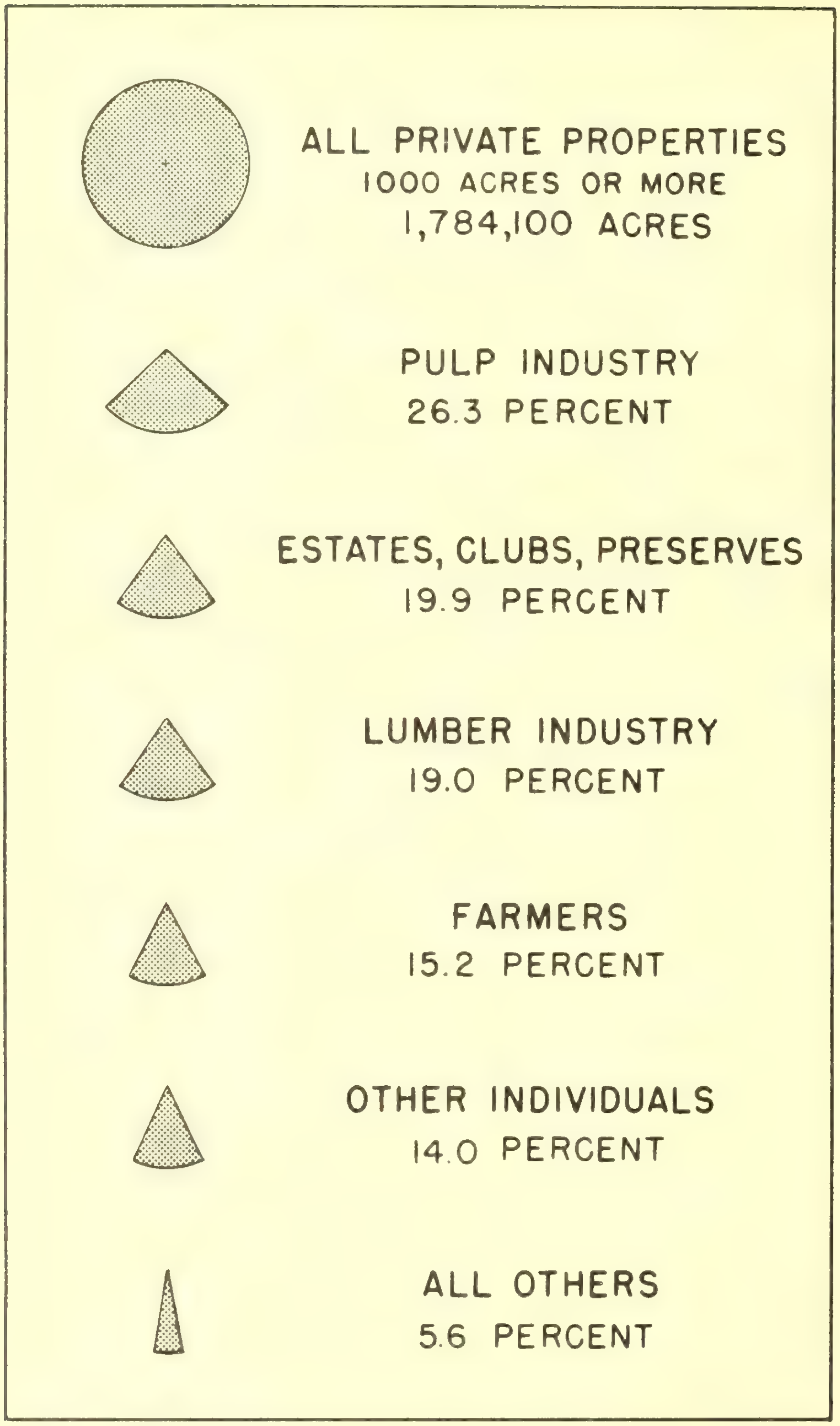
3/ Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.



Private owners own 89 out of every 100 acres of land; the federal government owns 8; and the state, county, and municipal governments own only 3 acres per 100.

Table 2. - Ownership of all land, 1947

Class of ownership	Distribution of all land	
	Acres	Percent
Public:		
National forest	245,400	5.4
Other federal	116,700	2.5
Total federal	362,100	7.9
State	112,800	2.5
County and municipal	7,400	0.1
Total public	482,300	10.5
Private:	4,093,800	89.5
All classes	4,576,100	100.0



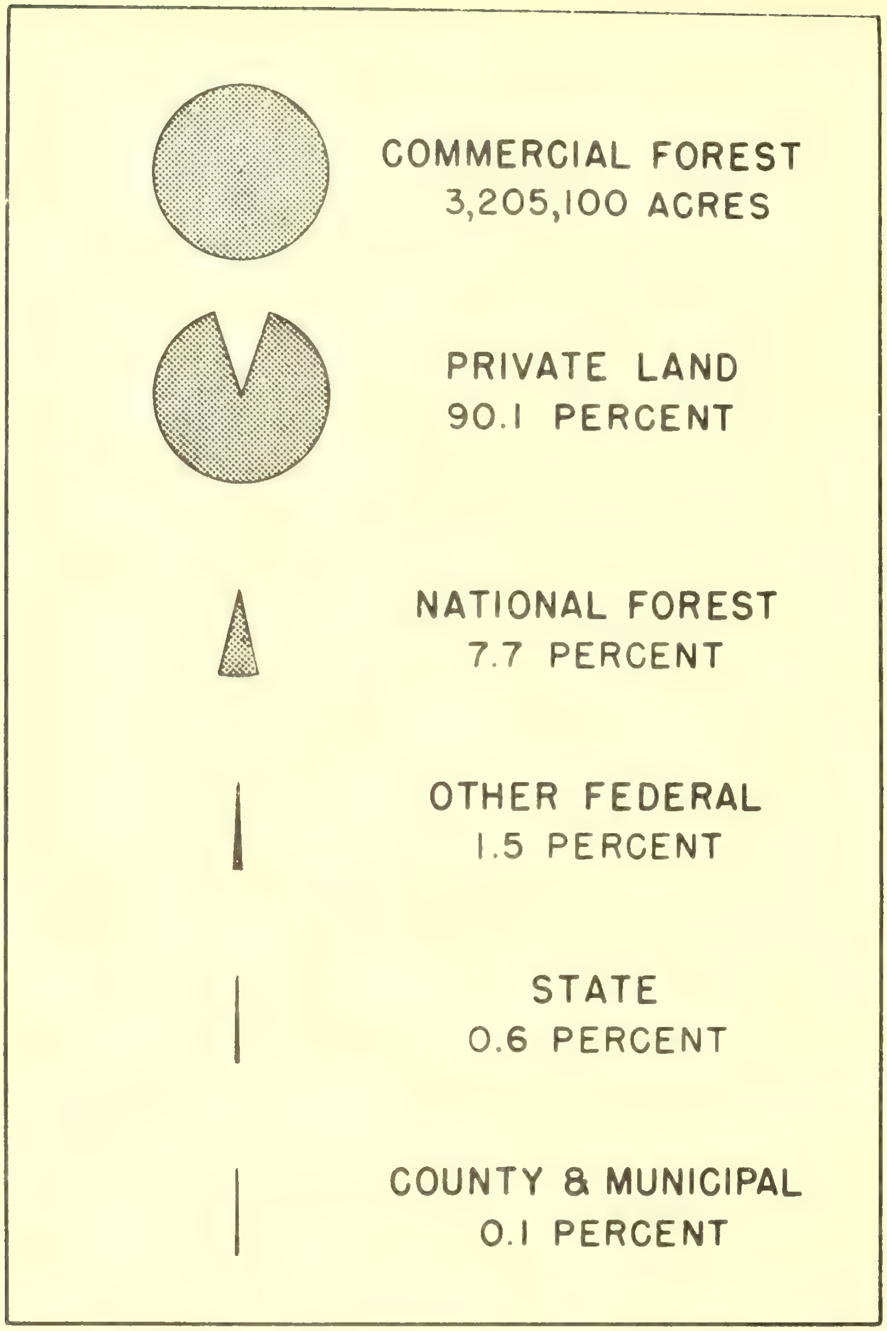
Thirty-nine percent of all the land (forest and non-forest) is in private ownerships of 1,000 acres or more. The pulp industry owns the largest share of this land.

Table 3. - Ownership of all private properties of 1,000 acres or more, 1946[1]

Class of ownership	Distribution of all land[2]	
	Acres	Percent
Corporate:		
Pulp company	468,900	26.3
Lumber company	243,100	13.6
Other forest industry	18,600	1.0
Bank, loan, and insurance	19,000	1.1
Railroad	17,600	1.0
Other	13,300	0 7
Total corporate	780,500	43.7
Individual:		
Estate, club, preserve	355,000	19.9
Farmer	270,900	15.2
Lumberman	97,100	5.4
Other forest industry	9,800	0 6
Other individual	249,900	14.0
Total individual	982,700	55.1
Unknown	20,900	1.2
All classes	1,784,100	100.0

[1] Data taken from county tax rolls, as of January 1, 1946.

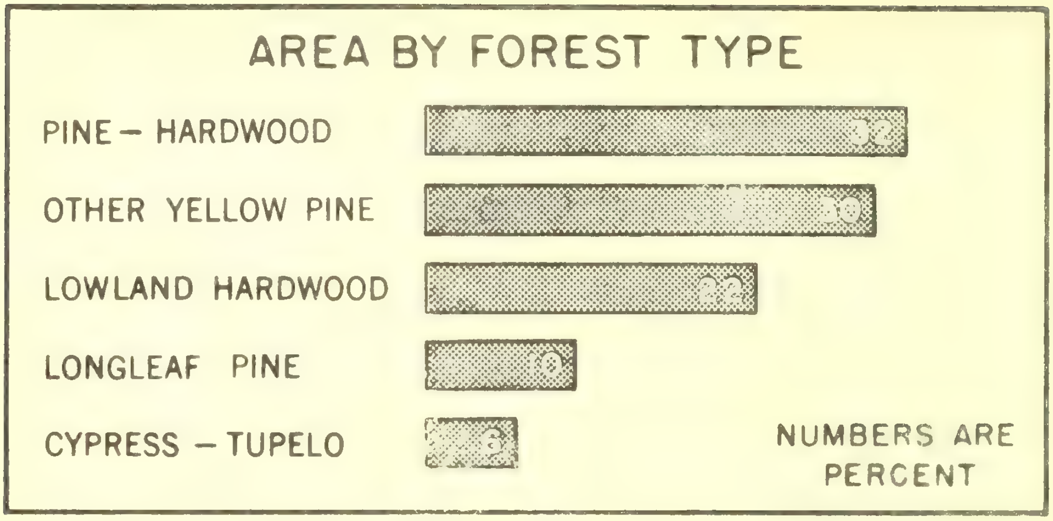
[2] Includes forest and non-forest land on properties 1,000 acres and larger in size.



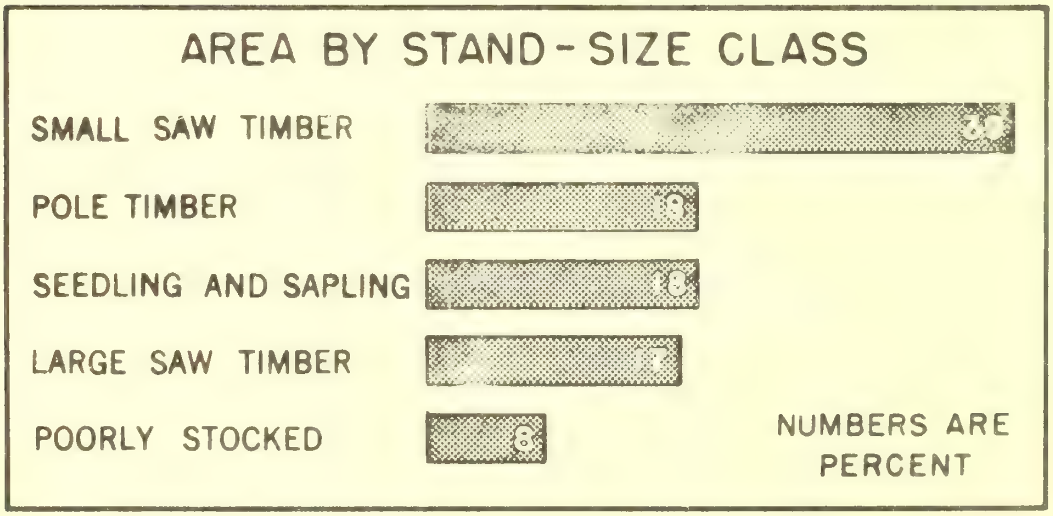
Ninety percent of the forest land used for commercial timber production is in private ownership. The Francis Marion National Forest in Berkeley and Charleston Counties is the only large block of publicly owned forest.

Table 4. - Ownership of commercial forest land, 1947

Class of ownership	Distribution of commercial forest land	
	Acres	Percent
Public:		
National forest	245,200	7.7
Other federal	48,000	1.5
Total federal	293,200	9.2
State	18,400	0.6
County and municipal	4,500	0.1
Total public	316,100	9.9
Private:	2,889,000	90.1
All classes	3,205,100	100.0



Yellow pine types occupy 72 percent of the forest. Hardwoods are largely restricted to swamps, stream bottoms, and poorly drained flats.

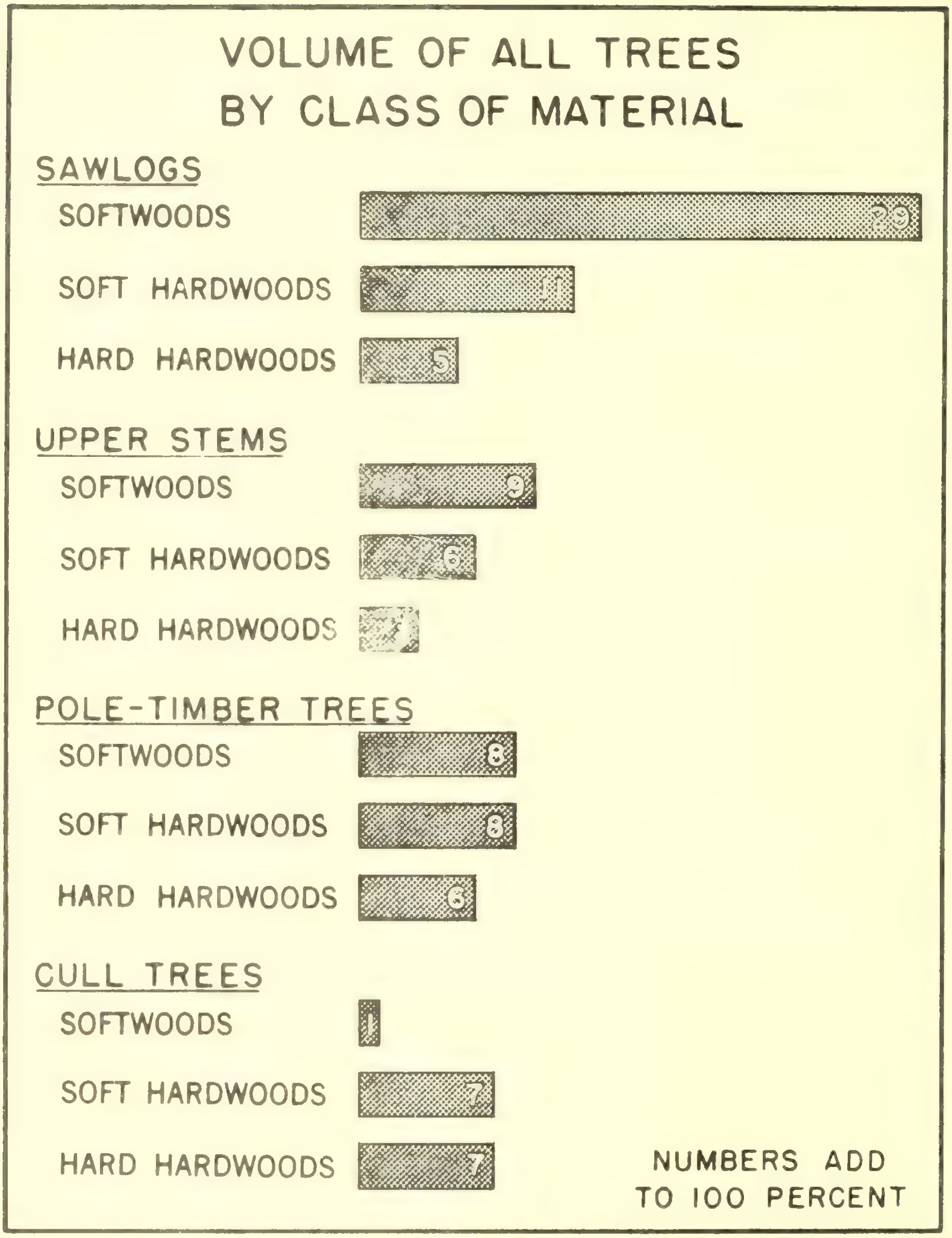


Saw-timber stands occupy 56 percent of the land. Large saw timber is more abundant than elsewhere in the state.

Table 5. - Commercial forest area by forest type and stand-size class, 1947

Forest type	Large saw timber	Small saw timber	Pole timber	Seedling and sapling	Poorly stocked and denuded	All classes
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	12,500	151,800	85,000	13,300	48,900	311,500
Other yellow pine	174,300	440,700	146,900	124,600	76,900	963,400
Pine-hardwood[1]	173,700	246,400	160,000	408,300	45,400	1,033,800
Lowland hardwood	163,500	311,500	125,300	45,600	71,500	717,400
Cypress-tupelo	33,200	92,400	53,400	--	—	179,000
All types	557,200	1,242,800	570,600	591,800	242,700	3,205,100

[1] Includes a small area in the upland hardwood type.



Forty-five percent of the net volume of sound wood, expressed in cords, is in sawlogs, 22 percent is in pole-timber trees, and 33 percent is in cull trees and upper stems and limbs of saw-timber trees.

Table 6. - Net volume of all trees, by species group and class of material, 1947[1]

Species group	Saw-timber trees		Pole-timber trees[3]	Sound portion of cull trees	All classes of material	
	Sawlogs	Upper stems[2]				
	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Percent
Softwoods:						
Longleaf, slash pine	2,464	833	929	29	4,255	8.9
Loblolly pine	8,162	2,610	1,429	185	12,386	25.9
Other pines	1,665	552	617	139	2,973	6.2
Total pines	12,291	3,995	2,975	353	19,614	41.0
Cypress	1,416	399	791	104	2,710	5.7
Total softwoods	13,707	4,394	3,766	457	22,324	46.7
Hardwoods:						
Tupelo	3,020	1,779	2,273	2,052	9,124	19.1
Sweetgum	1,693	545	882	595	3,715	7.8
Soft maple	553	393	675	668	2,289	4.8
Yellow-poplar[4]	219	106	128	128	581	1.2
Total soft hdwds.	5,485	2,823	3,958	3,443	15,709	32.
Red oaks	1,319	887	933	1,670	4,809	10.1
White oaks	305	212	546	709	1,772	3.7
Hickory	307	207	227	129	870	1.8
Ash	280	90	352	271	993	2.1
Sycamore, birch[5]	161	114	235	176	686	1.4
Holly, dogwood[6]	19	--	84	32	135	0.3
Scrub oak[7]	26	--	447	--	473	1.0
Total hard hdwds.	2,417	1,510	2,824	2,987	9,738	20.4
Total hardwoods	7,902	4,333	6,782	6,430	25,447	53.3
All species	21,609	8,727	10,548	6,887	47,771	100.0
	Percent	Percent	Percent	Percent	Percent	
	45.2	18.3	22.1	14.4	100.0	

---

[1] Sound wood and bark in both sound and cull trees 5.0 inches d.b.h. and larger.

[2] No limbs included in softwoods; other species include sections of limbwood that are four feet long and at least four inches in diameter inside bark.

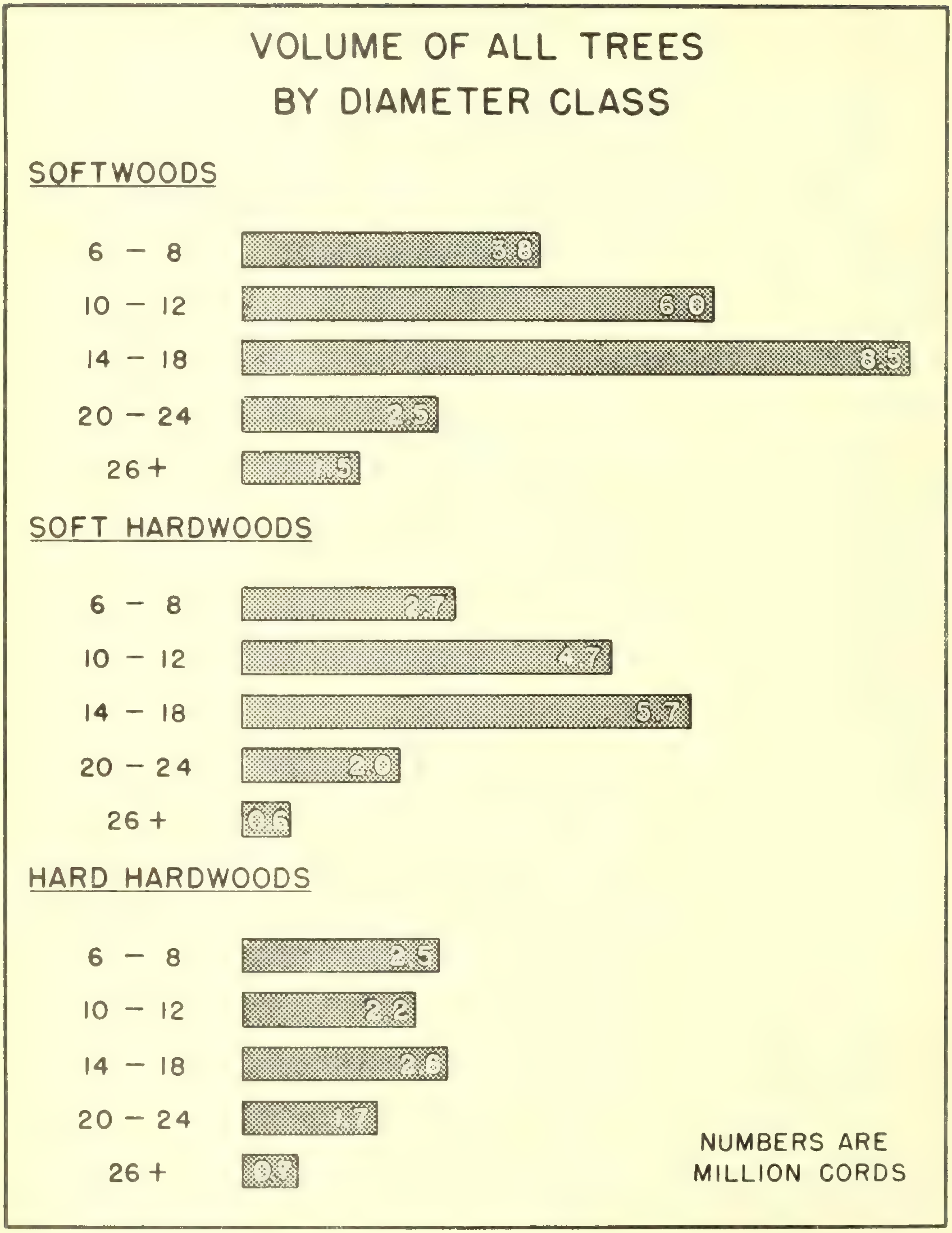
[3] Includes the entire stem to a minimum diameter of 4 inches inside bark. No limbs included.

[4] Includes cottonwood, willow, magnolia, and other soft-textured hardwoods.

[5] Includes beech, elm, and hackberry.

[6] Includes persimmon.

[7] Includes sourwood, ironwood, blue beech, and sassafras.



Nearly 22 million cords, 46 percent of the net volume of sound wood, is in trees less than 13.0 inches d.b.h.

Table 7. - Net volume of all trees, by species group and diameter class, 1947[1]

(in thousand cords)

Species group	6-8 inches	10-12 inches	14-18 inches	20-24 inches	26 inches and larger	All diameters
Softwoods:						
Longleaf, slash pine	930	1,497	1,583	236	9	4,255
Loblolly pine	1,442	2,815	5,079	1,897	1,153	12,386
Other pines	627	1,023	1,138	145	40	2,973
Total pines	2,999	5,335	7,800	2,278	1,202	19,614
Cypress	800	675	701	221	313	2,710
Total softwoods	3,799	6,010	8.501	2,499	1,515	22,324
Hardwoods:						
Tupelo	1,493	2,950	3,192	1,069	420	9,124
Sweetgum	660	960	1,441	542	112	3,715
Soft maple	513	580	892	268	36	2,289
Yellow-poplar[2]	82	168	177	89	65	581
Total soft hdwds.	2,748	4,658	5,702	1,968	633	15,709
Red oaks	856	922	1,377	1,137	517	4,809
White oaks	520	497	411	232	112	1,772
Hickory	160	179	326	175	30	870
Ash	398	222	206	105	62	993
Sycamore, birch[3]	179	205	277	25	--	686
Holly, dogwood[4]	68	43	24	--	--	135
Scrub oak[5]	370	99	4	-		473
Total hard hdwds.	2,551	2,167	2,625	1,674	721	9,738
Total hardwoods	5,299	6,825	8,327	3,642	1,354	25,447
All species	9,098	12,835	16,828	6,141	2,869	47.771
	Percent	Percent	Percent	Percent	Percent	Percent
	19.0	26.9	35.2	12.9	6.0	100.0

---

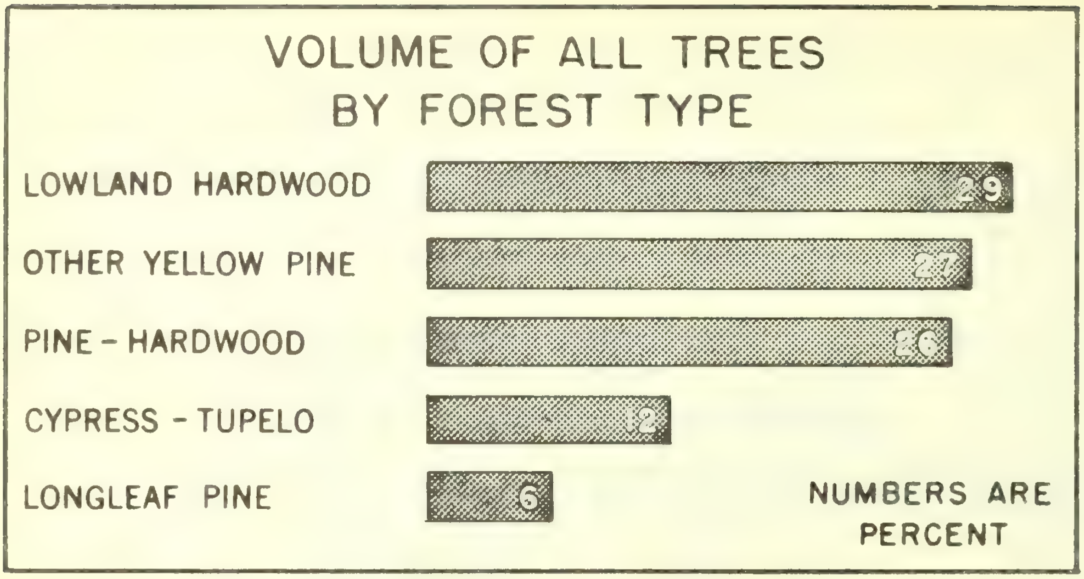
[1] Sound wood and bark in both sound and cull trees 5.0 inches d.b.h. and larger.

[2] Includes cottonwood, willow, magnolia, and other soft-textured hardwoods.

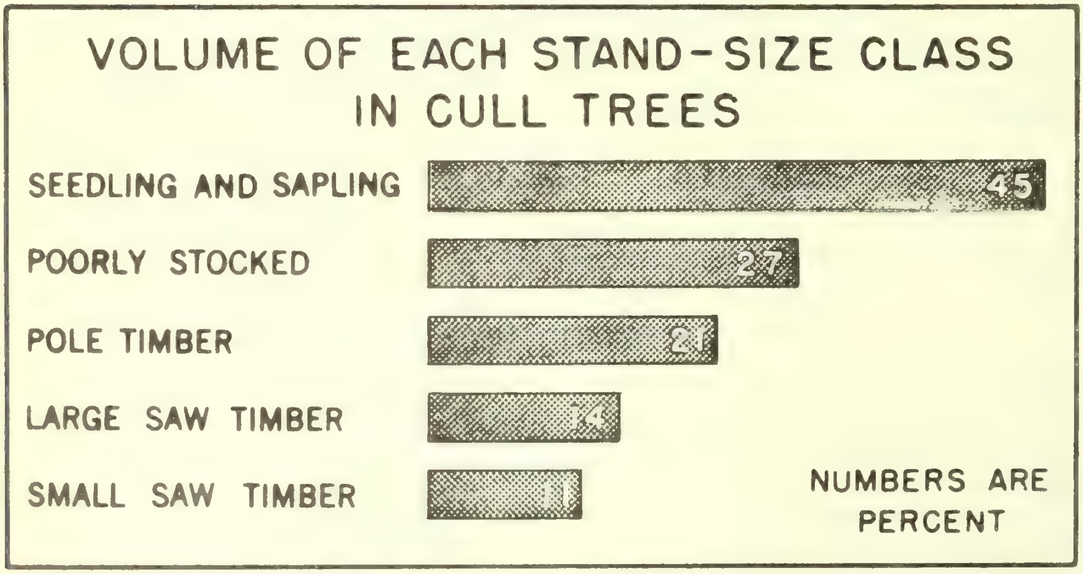
[3] Includes beech, elm, and hackberry.

[4] Includes persimmon.

[5] Includes sourwood, ironwood, blue beech, and sassafras.



Forty-one percent of the net volume measured in cords is in the lowland hardwood and cypress-tupelo types, which together occupy only 28 percent of the forest land.



Low-grade hardwoods are commonly left standing after commercial logging operations. Therefore cull trees make up a large part of the volume in the younger stands.

Table 8. - Net volume of all trees, by forest type and stand-size class, 1947[1]

SOUND TREES (in thousand cords)

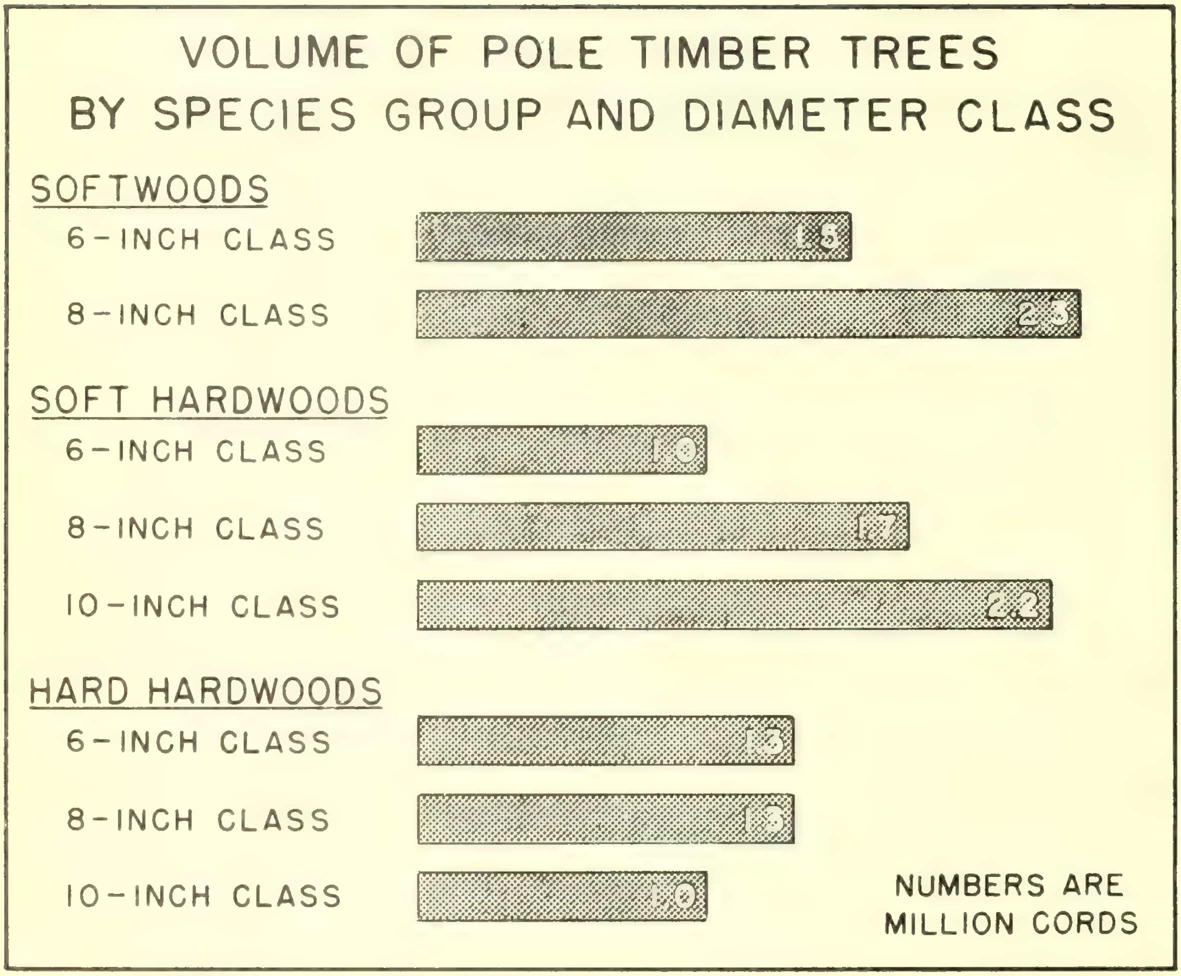
Forest type	Large saw timber	Small saw timber	Pole timber	Seedling and sapling	Poorly stocked and denuded	All classes
Longleaf pine	180	2,178	521	10	67	2,956
Other yellow pine	4,137	6,501	860	125	173	11,796
Pine-hardwood[2]	4,208	3,824	999	832	75	9,938
Lowland hardwood	3,918	6,151	941	71	--	11,081
Cypress-tupelo	1,383	3,363	367	--	--	5,113
All types	13,826	22,017	3,688	1,038	315	40,884

CULL TREES (in thousand cords)

Longleaf pine	1	19	13	3	--	36
Other yellow pine	308	332	176	33	65	914
Pine-hardwood[2]	641	760	374	632	54	2,461
Lowland hardwood	964	1,203	417	183	--	2,767
Cypress-tupelo	356	342	11	--	--	709
All types	2,270	2,656	991	851	119	6,887

[1] Sound wood and bark in both sound and cull trees 5.0 inches d.b.h. and larger.

[2] Includes a small volume in the upland hardwood type.



VOLUME OF POLE TIMBER TREES BY SPECIES GROUP AND DIAMETER CLASS

The young growing stock is predominantly of species that are suitable for pulping as 71 percent of the volume is in the pines, gums, soft maple, magnolia, yellow-poplar, and other soft hardwoods.

Table 9. - Net volume of pole-timber trees, by species group and diameter class, 1947[1]

(in thousand cords)

Species group	6 inches	8 inches	10 inches	All diameters
Softwoods:				
Longleaf, slash pine	366	564	[6]	930
Loblolly pine	559	883	[6]	1,442
Other pines	197	430	[6]	627
Total pines	1,122	1,877	[6]	2,999
Cypress	383	417	[6]	800
Total softwoods	1,505	2,294	[6]	3,799
Hardwoods:				
Tupelo	478	1,015	1,375	2,868
Sweetgum	259	401	415	1,075
Soft maple	249	264	324	837
Yellow-poplar[2]	43	39	85	167
Total soft hdwds.	1,029	1,719	2,199	4,947
Red oak	420	436	400	1,256
White oak	226	294	214	734
Hickory	70	90	81	241
Ash	227	171	109	507
Sycamore, birch[3]	61	118	125	304
Holly, dogwood[4]	34	34	38	106
Scrub oak[5]	206	164	77	447
Total hard hdwds.	1,244	1,307	1,044	3,595
Total hardwoods	2,273	3,026	3,243	8,542
All species	3,778	5,320	3,243	12,341

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[1] Sound wood and bark in both sound and cull pole-timber trees 5.0 inches d.b.h. and larger.

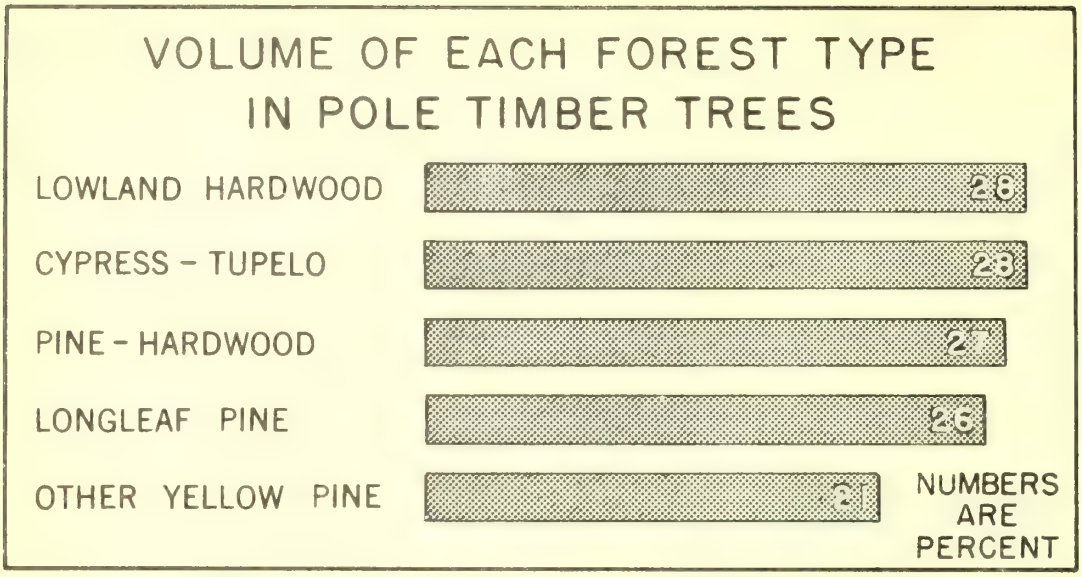
[2] Includes cottonwood, willow, magnolia, and other soft-textured hardwoods.

[3] Includes beech, elm, and hackberry.

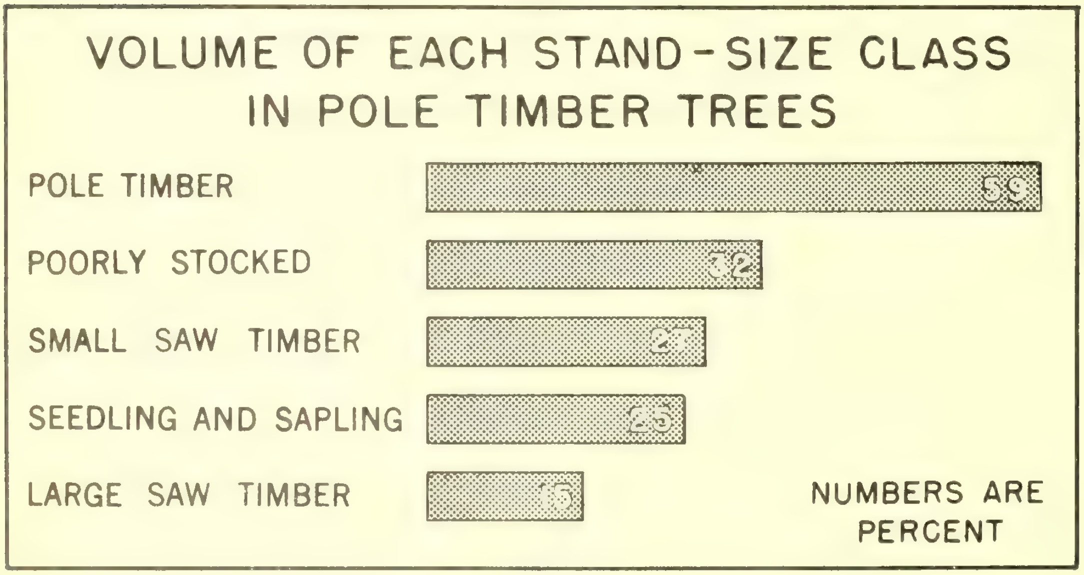
[4] Includes persimmon.

[5] Includes sourwood, ironwood, blue beech, and sassafras.

[6] Softwood trees in the 10-inch class are saw timber.



Between 20 and 30 percent of the net volume, measured in cords, of each forest type is in pole-timber trees.



In each stand-size class there is an intermingling of pole-timber and saw-timber trees. In small saw-timber stands 27 percent of the net volume measured in cords is in pole-timber trees, and in pole-timber stands 41 percent of the volume is in saw-timber trees.

Table 10. - Net volume of pole-timber trees, by forest type and stand-size class, 1947[1]

SOUND TREES (in thousand cords)

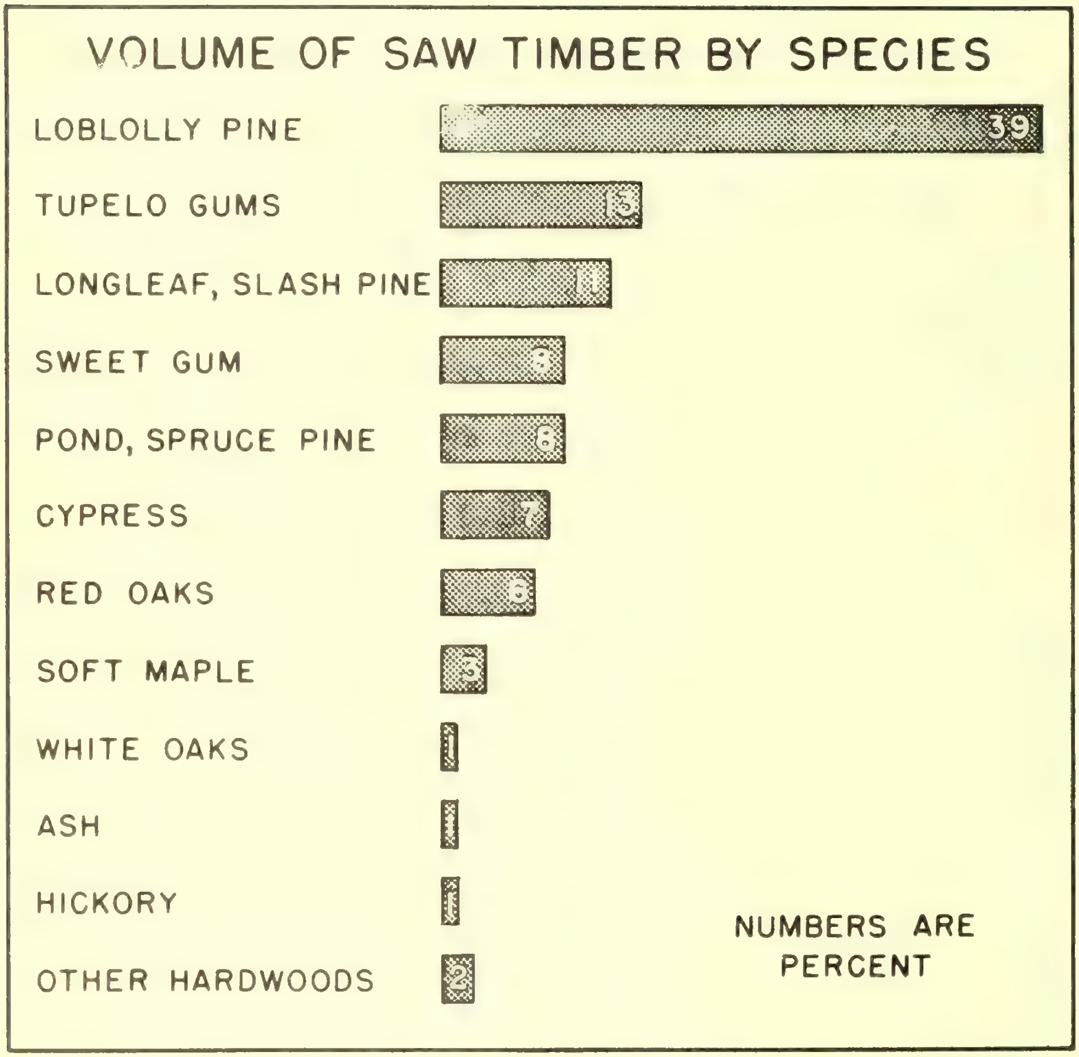
Forest type	Large saw timber	Small saw timber	Pole timber	Seedling and sapling	Poorly stocked and denuded	All classes
Longleaf pine	5	396	347	3	4	755
Other yellow pine	424	1,270	496	63	100	2,353
Pine-hardwood[2]	639	1,278	569	253	30	2,769
Lowland hardwood	629	1,881	639	40	--	3,189
Cypress-tupelo	186	977	319	--	--	1,482
All types	1,883	5,802	2,370	359	134	10,548

CULL TREES (in thousand cords)

Longleaf pine	1	9	1	--	--	11
Other yellow pine	79	191	33	25	--	328
Pine-hardwood[2]	142	224	143	94	7	610
Lowland hardwood	207	285	198	3	--	693
Cypress-tupelo	48	95	8	--	--	151
All types	477	804	383	122	7	1,793

1/ Sound wood and bark in all sound and cull pole-timber trees 5.0 inches d.b.h. and larger.

2/ Includes a small volume in the upland hardwood type.



Fifty-two percent of the saw timber is loblolly pine and the tupelo gums.

Table 11. - Net volume of saw timber, by species group and diameter class, 1947[1]

(in thousand board feet)

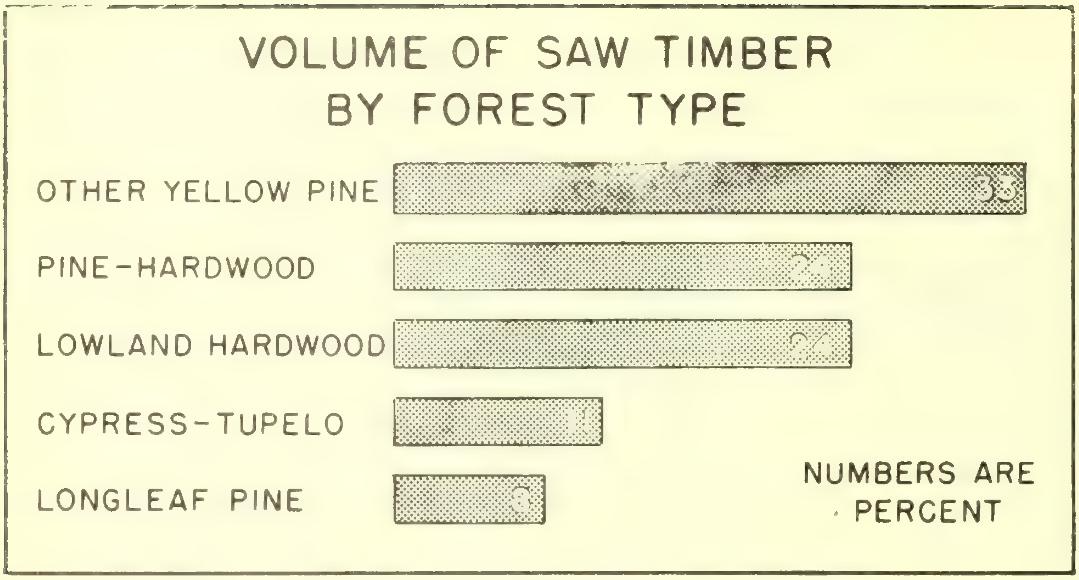
	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters
Softwoods:					
Longleaf, slash pine	501,800	638,100	103,300	4,300	1,247,500
Loblolly pine	901,600	1,992,700	811,900	511,000	4,217,200
Other pines	301,900	437,400	62,700	16,500	818,500
Total pines	1,705,300	3,068,200	977,900	531,800	6,283,200
Cypress	233,600	292,000	96,100	142,000	763,700
Total softwoods	1,938,900	3,360,200	1,074,000	673,800	7,046,900
Hardwoods:					
Tupelo	340,600	803,000	203,000	53,600	1,400,200
Sweetgum	156,500	498,000	187,700	27,900	870,100
Soft maple	45,300	181,900	45,200	1,300	273,700
Yellow-poplar[3]	20,300	52,700	27,700	10,000	110,700
Red oak	86,300	257,900	198,700	97,500	640,400
White oak	24,300	79,600	25,400	16,700	146,000
Hickory	19,800	74,600	37,900	8,900	141,200
Ash	29,500	57,300	39,100	20,300	146,200
Sycamore, birch[4]	14,500	60,700	1,600	---	76,800
Total hardwoods	737,100	2,065,700	766,300	236,200	3,805,300
All species	2,676,000	5,425,900	1,840,300	910,000	10,852,200
	Percent	Percent	Percent	Percent	Percent
	24.6	50.0	17.0	8.4	100.0

[1] According to International 1/4-inch log rule.

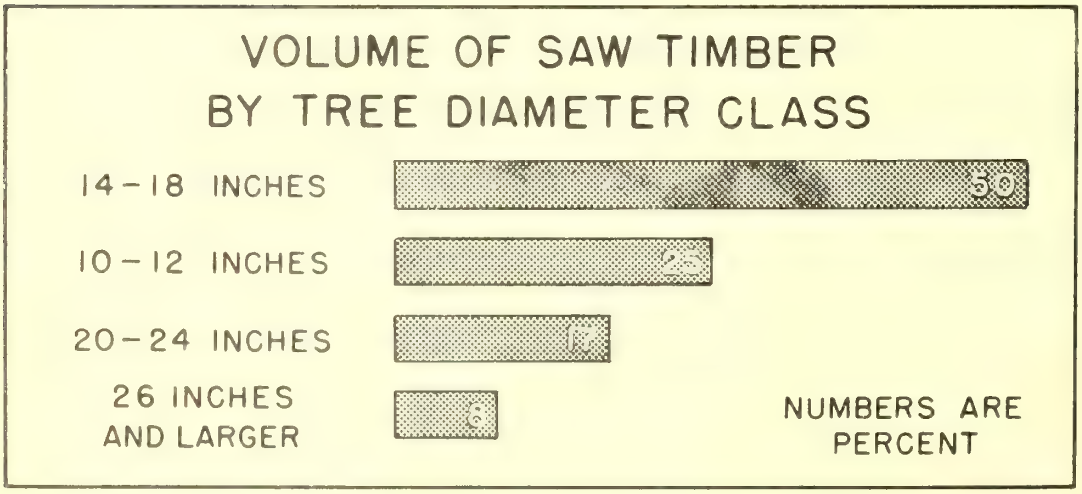
[2] Ten-inch hardwoods are not included.

[3] Includes cottonwood, willow, magnolia, and other soft-textured hardwoods.

[4] Includes beech, elm, and hackberry.



The pine types contain the largest share of the saw timber, yet 35 percent is in the lowland hardwood and cypress-tupelo types.



Seventy-five percent of the saw timber is in trees over 13.0 inches in diameter at breast height.

Table 12. - Net volume of saw timber, by forest type and stand-size class, 1947[1]

(in thousand board feet)

Forest type	Large saw timber	Small saw timber	Pole timber	Seedling and sapling	Poorly stocked and denuded	All classes
Longleaf pine	75,300	656,600	62,000	3,000	28,500	825,400
Other yellow pine	1,492,900	1,911,100	123,600	22,700	28,100	3,578,400
Pine-hardwood	1,387,300	888,900	145,200	212,500	14,500	2,648,400
Lowland hardwood[2]	1,111,900	1,360,800	104,700	9,300	--	2,586,700
Cypress-tupelo	427,800	768,500	17,000	--	--	1,213,300
All types	4,495,200	5,585,900	452,500	247.500	71,100	10,852,200
	Percent	Percent	Percent	Percent	Percent	Percent
	41.4	51.5	4.2	2.3	0.6	100.0

1/ According to International 1/4-inch rule.

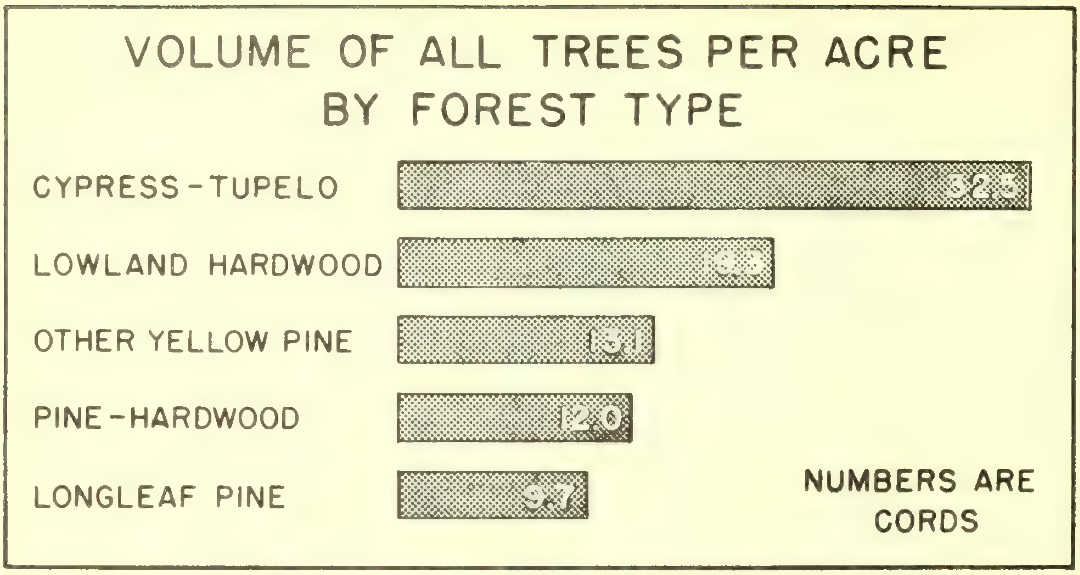
2/ Includes a small volume in the upland hardwood type.

Table 13. - Net volume of saw timber, by stand-size class and diameter class, 1947[1]

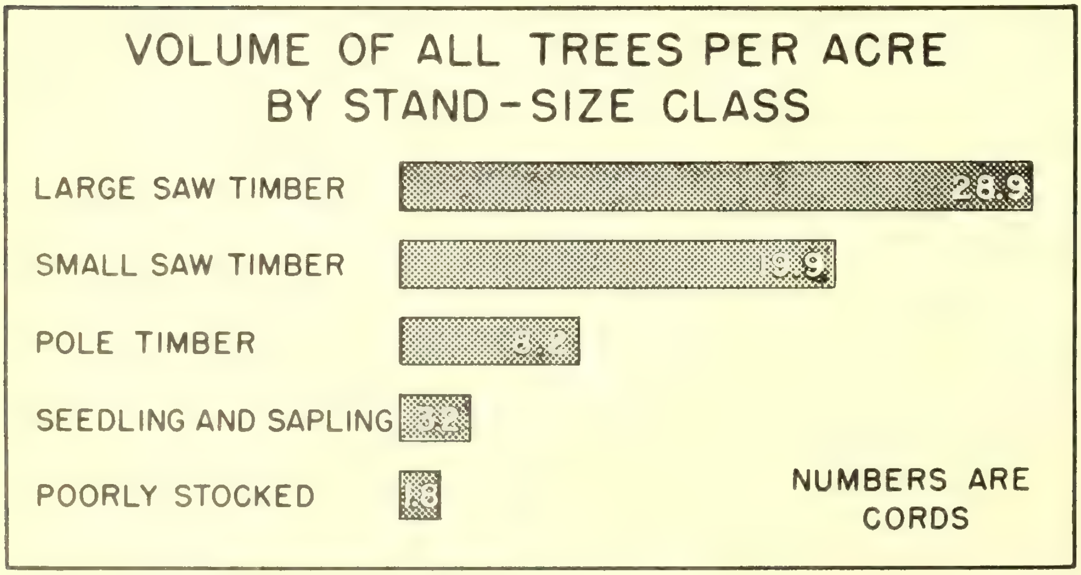
(in thousand board feet)

Stand-size class	10-12 inches	14-18 inches	20-24 inches	26+ inches	All diameters
Large saw timber	378,100	1,993,100	1,365,000	759,000	4,495,200
Small saw timber	1,990,900	3,066,200	402,100	126,700	5,585,900
Pole timber	217,500	178,400	32,300	24,300	452,500
Seedling and sapling	79,500	154,900	13,100		247,500
Poorly stocked and denuded	10,000	33,300	27,800	-	71,100
All classes	2,676,000	5,425,900	1,840,300	910,000	10,852,200

1/ According to International 1/4-inch rule.



The average volume in cords per acre ranges from 9.7 in the longleaf pine type to 32.5 in the cypress-tupelo type. In both the lowland hardwood and cypress-tupelo types, the volume of cull trees averages nearly 4 cords per acre.



The average volume per acre of all stands is 14.8 cords, of which 2.1 cords are in cull trees.

Table 14. - Average volume, in cords per acre, of all trees, by forest type and stand-size class, 1947[1/]

SOUND TREES

Forest type	Large saw timber		Small saw timber		Pole timber		Seedling and sapling		Poorly stocked and denuded		All classes	
	S	H	S	H	S	H	S	H	S	H	S	H
Longleaf pine	14.5	3/	14.2	0.1	6.1	3/	0.8	3/	1.4	3/	9.4	0.1
Other yellow pine	20.7	3.0	13.5	1.2	5.8	3/	0.9	0.1	2.2	0.1	11.1	1.1
Pine-hardwood[2/]	13.7	10.6	7.8	7.8	2.9	3.4	1.5	0.5	0.2	1.4	5.2	4.4
Lowland hardwood	2.9	21.1	2.0	17.7	0.4	7.1	0.6	1.0	3/	3/	1.7	13.8
Cypress-tupelo	12.6	29.0	10.9	25.5	4.7	2.2	--	--	--		9.4	19.2
All types	12.7	12.1	9.4	8.3	3.8	2.7	1.3	0.5	1.0	0.3	6.8	5.[illegible]

CULL TREES

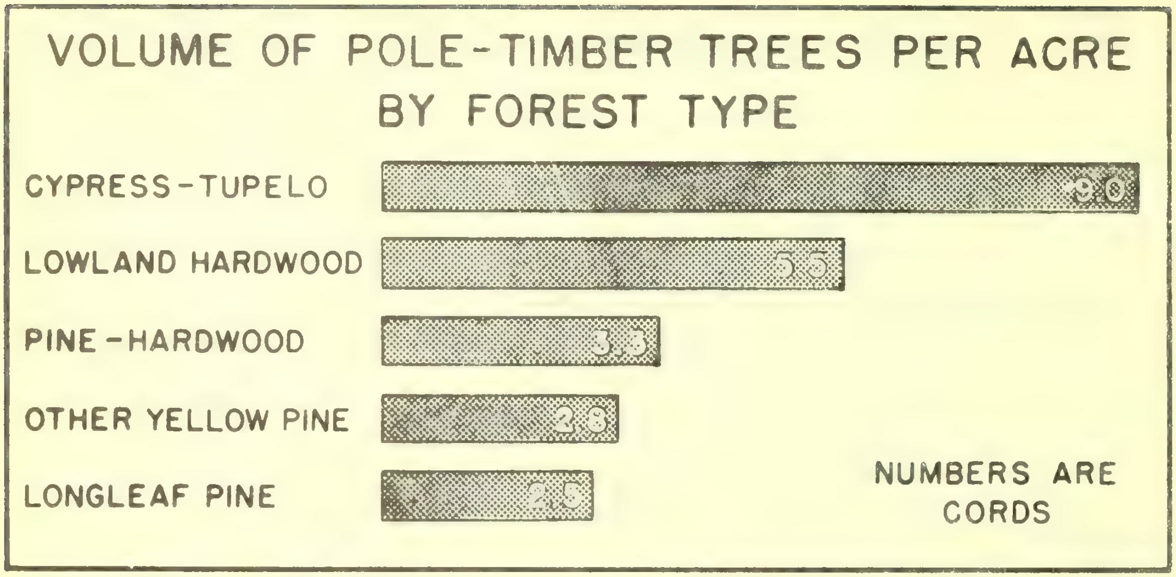
Forest type	Large saw timber		Small saw timber		Pole timber		Seedling and sapling		Poorly stocked and denuded		All classes	
	S	H	S	H	S	H	S	H	S	H	S	H
Longleaf pine	3/	0.1	3/	0.1	0.1	3/	0.2	3/	3/	3/	0.1	0.1
Other yellow pine	0.2	1.5	0.1	0.7	0.6	0.6	3/	0.3	0.8	3/	0.2	0.7
Pine-hardwood[2/]	0.1	3.6	3/	3.1	0.5	1.9	3/	1.5	0.2	1.0	0.1	2.3
Lowland hardwood	0.1	5.8	3/	3.8	3/	3.3	0.1	3.9	3/	3/	3/	3.8
Cypress-tupelo	1.0	9.8	0.5	3.2	3/	0.2	--	--	--	--	0.4	3.5
All types	0.2	3.9	0.1	2.1	0.3	1.4	3/	1.4	0.3	0.2	0.1	2.0

S - Softwoods, H - Hardwoods.

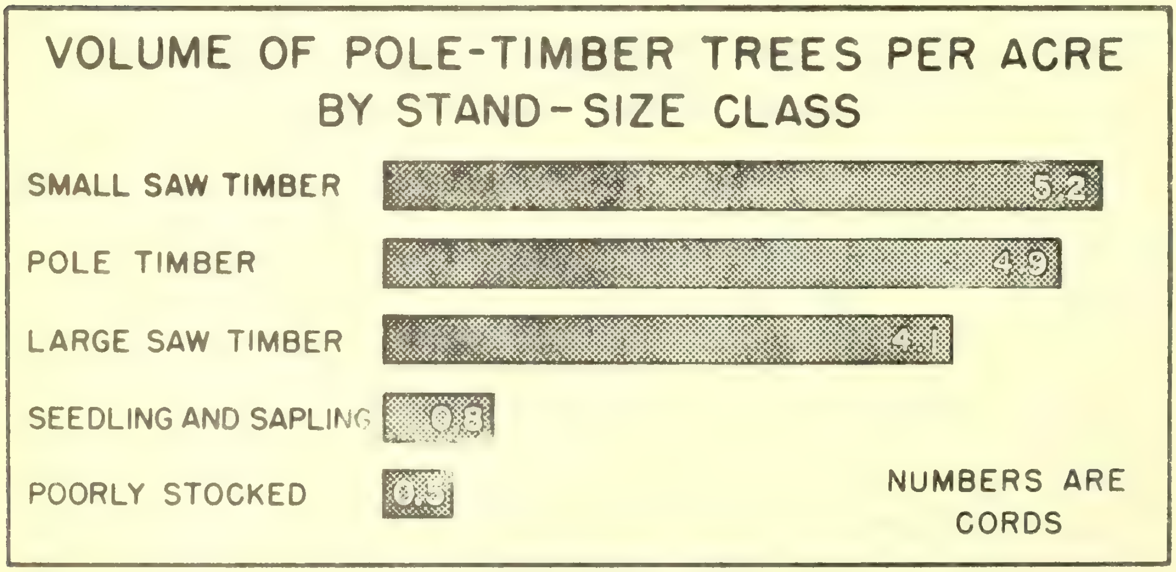
[1/] Sound wood and bark in both sound and cull trees 5.0 inches d.b.h. and larger.

[2/] Includes a small volume in the upland hardwood type.

[3/] Less than 0.05 cords per acre.



The average volume of pole-timber trees per acre ranges from 2.5 cords in the longleaf pine type to 9.0 cords in the cypress-tupelo type. In both the lowland hardwood and cypress-tupelo types, the volume of cull pole-timber trees is about 1 cord per acre; in other types it is less.



The average volume of pole-timber trees per acre is 3.8 cords, of which 0.5 cord is in cull trees.

Table 15. - Average volume, in cords per acre, of pole-timber trees, by forest type and stand-size class, 1947[1]

SOUND TREES

Forest type	Large saw timber		Small saw timber		Pole timber		Seedling and sapling		Poorly stocked and denuded		All classes	
	S	H	S	H	S	H	S	H	S	H	S	H
Longleaf pine	0.4	3/	2.5	0.1	4.1	3/	0.2	3/	0.1	3/	2.4	0.1
Other yellow pine	0.7	1.7	1.9	1.0	3.4	3/	0.4	0.1	1.3	3/	1.7	0.8
Pine-hardwood[2]	0.4	3.3	1.5	3.6	1.1	2.4	0.2	0.4	3/	0.7	0.7	2.0
Lowland hardwood	0.2	3.7	0.3	5.8	0.1	5.1	0.3	0.6	3/	3/	0.2	4.3
Cypress-tupelo	0.5	5.1	3.6	6.9	4.3	1.7	--	--	--	--	3.2	5.0
All types	0.4	2.9	1.6	3.0	2.2	2.0	0.2	0.4	0.4	0.1	1.2	2.1

CULL TREES

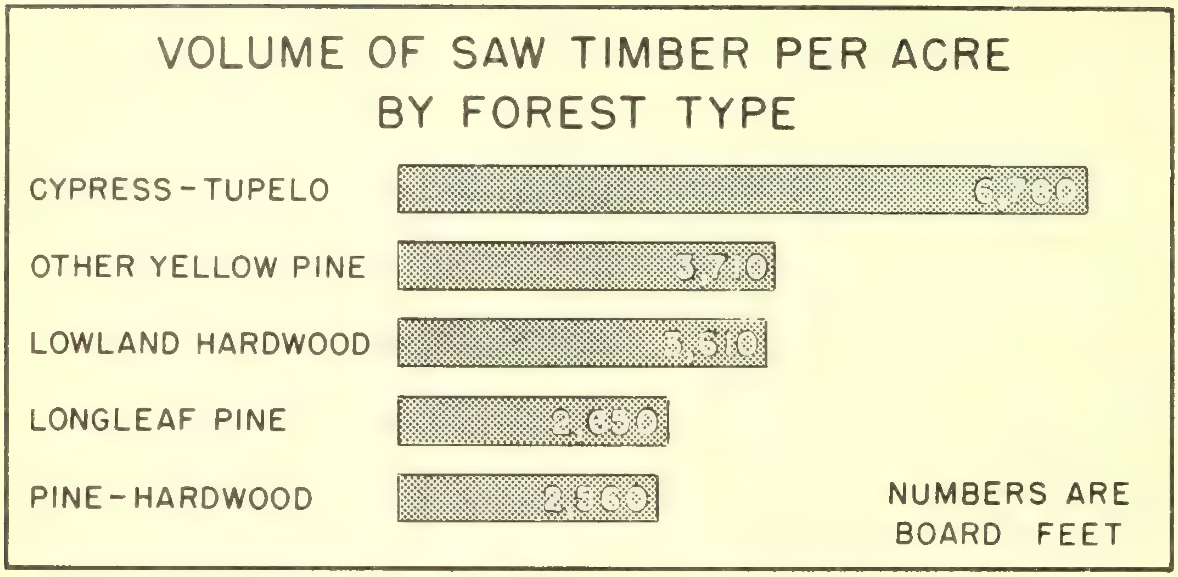
Forest type	Large saw timber		Small saw timber		Pole timber		Seedling and sapling		Poorly stocked and denuded		All classes	
	S	H	S	H	S	H	S	H	S	H	S	H
Longleaf pine	3/	0.1	3/	3/	3/	3/	3/	3/	3/	3/	3/	3/
Other yellow pine	3/	0.4	3/	0.4	3/	0.2	3/	0.2	3/	3/	3/	0.3
Pine-hardwood[2]	3/	0.8	3/	0.9	3/	0.9	3/	0.2	3/	0.2	3/	0.6
Lowland hardwood	3/	1.3	3/	0.9	3/	1.6	3/	0.1	3/	3/	3/	1.0
Cypress-tupelo	3/	1.4	0.1	0.9	3/	0.2		--	--	--	3/	0.8
All types	3/	0.8	3/	0.6	3/	0.7	3/	0.2	3/	3/	3/	0.5

S - Softwoods, H - Hardwoods.

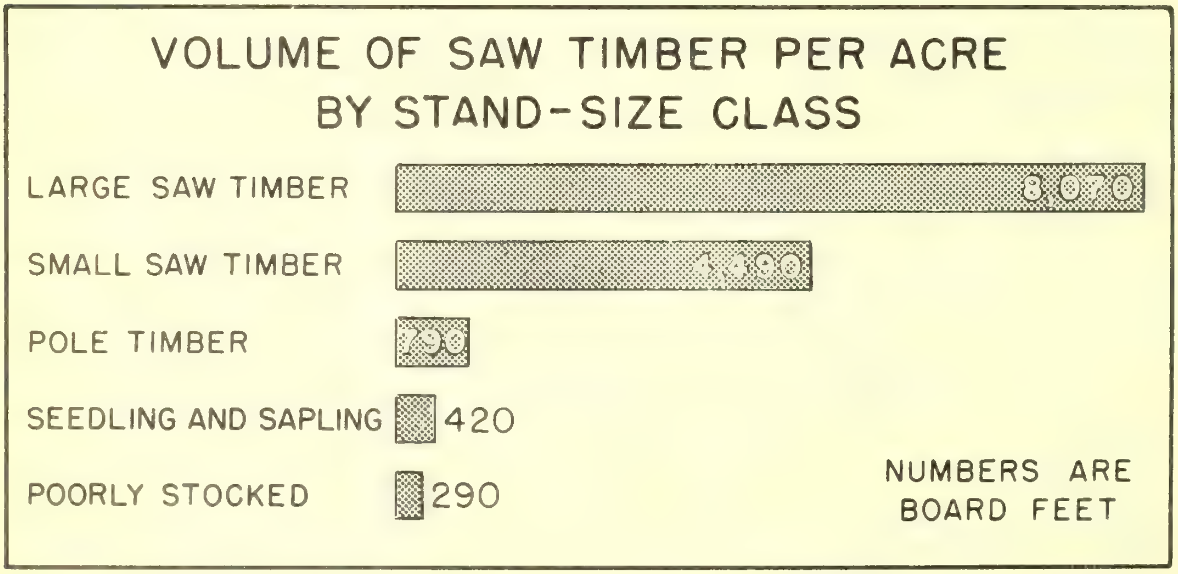
[1] Sound wood and bark in both sound and cull pole-timber trees 5.0 inches d.b.h. and larger.

[2] Includes a small volume in the upland hardwood type.

[3] Less than 0.05 cords per acre.



The average volume of saw timber per forest acre ranges from 2,560 board feet in the pine-hardwood type to 6,780 board feet in the cypress-tupelo type, averaging 3,390 board feet for all types.



The average volume per acre of all saw-timber stands is 5,600 board feet.

Table 16. - Average volume per acre of saw timber, by forest type and stand-size class, 1947[1]

(in board feet)

Forest type	Large saw timber		Small saw timber		Pole timber		Seedling and sapling		Poorly stocked and denuded		All classes	
	S	H	S	H	S	H	S	H	S	H	S	H
Longleaf pine	6,050	[3]	4,320	[3]	730	[3]	220	[3]	580	[3]	2,650	[3]
Other yellow pine	8,150	410	4,240	90	840	[3]	170	10	350	20	3,590	120
Pine-hardwood[2]	5,660	2,330	2,340	1,270	640	270	480	40	90	230	1,800	760
Lowland hardwood	1,180	5,620	700	3,670	150	680	80	120	[3]	[3]	610	3,000
Cypress-tupelo	5,590	7,290	2,900	5,410	130	190	--	--	--	--	2,580	4,200
All types	5,130	2,940	2,890	1,600	550	240	380	40	240	50	2,200	1,190

S - Softwoods, H - Hardwoods

[1] According to International 1/4-inch log rule.

[2] Includes a small volume in the upland hardwood type.

[3] Less than 10 board feet per acre.

Table 17. – County land area by broad use classes, 1947

	Total land area[1]	Non-forest land	All forest land	Non-commercial forest[2]	Commercial forest	
	Acres	Acres	Acres	Acres	Acres	Percent
Beaufort	426,500	237,100	189,400	1,500	187,900	44.1
Berkeley	685,200	92,200	593,000	--	593,000	86.5
Charleston	594,100	259,900	334,200	1,300	332,900	56.0
Colleton	663,300	198,300	465,000	900	464,100	70.0
Dorchester	363,400	95,200	268,200	700	267,500	73.6
Georgetown	520,200	104,600	415,600	5,900	409,700	78.8
Hampton	359,100	119,600	239,500	100	239,400	66.7
Jasper	367,200	86,400	280,800	--	280,800	76.5
Williamsburg	597,100	167,300	429,800	--	429,800	72.0
Total	4,576,100	1,360,600	3,215,500	10,400	3,205,100	70.0

[1] Gross area from Bureau of the Census, 1940, less the area of inland water as estimated by the Forest Survey.

[2] Non-productive forest land plus forest withdrawn from commercial timber use.

Table 18. - Ownership of all land, by county, 1947

County	Private1/		Public					
			National forest	Other federal	State	County, city, town	Total1/	
	Acres	Percent	Acres	Acres	Acres	Acres	Acres	Percent
Beaufort	413,300	96.9	--	9,200	4,000	--	13,200	3.1
Berkeley	394,200	57.5	186,800	12,300	90,100	1,800	291,000	42.5
Charleston	479,000	80.6	58,600	52,900	1,500	2,100	115,100	19.4
Colleton	660,400	99.6	--	--	400	2,500	2,900	0.4
Dorchester	362,300	99.7	--	--	1,100	--	1,100	0.3
Georgetown	473,700	91.1	--	35,600	10,000	900	46,500	8.9
Hampton	353,400	98.4	--	--	5,700	--	5,700	1.6
Jasper	360,400	98.1	--	6,700	--	100	6,800	1.9
Williamsburg	597,100	100.0	--	--	--	--	--	0.0
Total	4,093,800	89.5	245,400	116,700	112,800	7,400	482,300	10.5

1/ Percent is of total land area.

Table 19. - Ownership of all commercial forest land, by county, 1947

County	Private1/		Public					
			National forest	Other federal	State	County, city, town	Total1/	
	Acres	Percent	Acres	Acres	Acres	Acres	Acres	Percent
Beaufort	186,900	99.5	--	1,000	--	--	1,000	0.5
Berkeley	384,800	64.9	186,800	7,100	13,100	1,200	208,200	35.1
Charleston	268,900	80.8	58,400	3,600	100	1,900	64,000	19.2
Colleton	462,700	99.7	--	--	--	1,400	1,400	0.3
Dorchester	267,500	100.0	--	--	--	--	--	0.0
Georgetown	374,200	91.3	--	35,500	--	--	35,500	8.7
Hampton	234,200	97.8	--	--	5,200	--	5,200	2.2
Jasper	280,000	99.7	--	800	--	--	800	0.3
Williamsburg	429,800	100.0	--	--	--	--	--	0.0
Total	2,889,000	90.1	245,200	48,000	18,400	4,500	316,100	9.9

1/ Percent is of total commercial forest area.

Table 20. - Net volume of all trees by pulping preference species and tree-diameter groups, by county, 1947[1]

SOUND TREES (in thousand cords)

County	Yellow pines		Gums, soft maple and yellow-poplar[2]		Other species[3]		All species
	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	
Beaufort	393	503	217	205	215	105	1,638
Berkeley	1,861	2,673	1,132	1,512	830	1,121	9,129
Charleston	930	2,001	549	525	796	267	5,068
Colleton	973	1,332	1,144	823	931	729	5,932
Dorchester	873	1,019	605	871	413	691	4,472
Georgetown	916	1,449	1,166	1,483	696	741	6,451
Hampton	334	517	319	182	360	136	1,848
Jasper	779	544	430	313	143	169	2,378
Williamsburg	1,062	1,102	371	419	570	444	3,968
Total	8,121	11,140	5,933	6,333	4,954	4,403	40,884

CULL TREES (in thousand cords)

County	Yellow pines 5 - 12 inches	Yellow pines 13 + inches	Gums, soft maple and yellow-poplar 5 - 12 inches	Gums, soft maple and yellow-poplar 13 + inches	Other species 5 - 12 inches	Other species 13 + inches	All species
Beaufort	24	33	46	42	213	127	485
Berkeley	20	4	266	339	199	408	1,236
Charleston	51	27	208	167	119	176	748
Colleton	25	11	185	160	122	212	715
Dorchester	21	24	105	150	92	121	513
Georgetown	23	11	244	385	127	98	888
Hampton	4	6	79	211	34	158	492
Jasper	19	18	181	136	102	118	574
Williamsburg	26	6	159	380	231	434	1,236
Total	213	140	1,473	1,970	1,239	1,852	6,887
All trees	8,334	11,280	7,406	8,303	6,193	6,255	47,771

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[1] Sound wood and bark in sound and cull trees 5.0 inches d.b.h. and larger.

[2] Includes cottonwood, willow, magnolia, and other soft-textured hardwoods.

[3] Includes cypress and the hard-textured hardwoods.

[4] Includes upper stems and limbs 4.0 inches and larger in diameter inside bark.

Table 21. - Net volume of saw timber by species group and county, 1947 1/

(in thousand board feet)

County	Softwoods 2/	Gums, soft maple, and yellow-poplar 3/	Other hardwoods 4/	All species
Beaufort	281,500	92,300	39,400	413,200
Berkeley	1,640,500	617,800	301,100	2,559,400
Charleston	1,143,200	218,800	87,700	1,449,700
Colleton	853,100	370,800	219,200	1,443,100
Dorchester	706,000	358,200	165,700	1,229,900
Georgetown	1,010,300	581,400	110,800	1,702,500
Hampton	296,800	94,900	57,300	449,000
Jasper	389,200	149,000	56,300	594,500
Williamsburg	726,300	171,500	113,100	1,010,900
Total	7,046,900	2,654,700	1,150,600	10,852,200

1/ According to International 1/4-inch rule.

2/ Includes all pines and cypress.

3/ Includes cottonwood, willow, magnolia, and other soft-textured hardwoods.

4/ Includes the oaks, hickories, ash, sycamore, birch, beech, elm, hackberry.

Table 22. - Net volume of saw timber by broad species and tree-diameter groups, by county, 1947 1/

(in thousand board feet)

County	Softwoods		Hardwoods		Percent	
	9 - 14 inches	15 + inches	11 - 16 inches	17 + inches	Soft-woods	Hard-woods
Beaufort	115,600	165,900	108,100	23,600	4.0	3.5
Berkeley	740,000	900,500	513,800	405,100	23.3	24.1
Charleston	517,600	625,600	188,600	117,900	16.2	8.0
Colleton	374,900	478,200	340,400	249,600	12.1	15.5
Dorchester	293,400	412,600	259,800	264,100	10.0	13.8
Georgetown	502,900	507,400	388,600	303,600	14.4	18.2
Hampton	174,700	122,100	126,200	26,000	4.2	4.0
Jasper	221,800	167,400	113,700	91,600	5.5	5.4
Williamsburg	360,700	365,600	179,200	105,400	10.3	7.5
Total	3,301,600	3,745,300	2,218,400	1,586,900	100.0	100.0

1/ According to International 1/4-inch rule.

APPENDIX

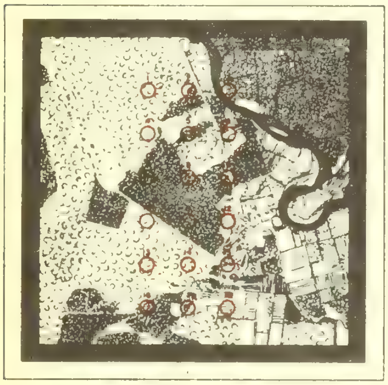
How the Forest Inventory Is Made

Definition of Terms

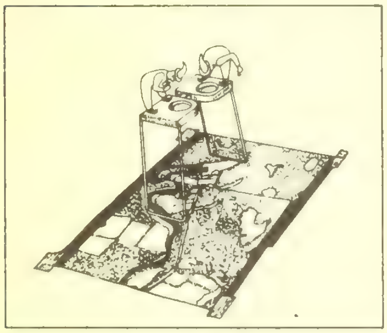
Accuracy of Survey

HOW THE FOREST INVENTORY IS MADE

The present system of inventory is based upon interpretation of aerial photographs supplemented by cruising of randomly selected ground plots. The county is the basic work unit. Steps in the procedure are as follows:



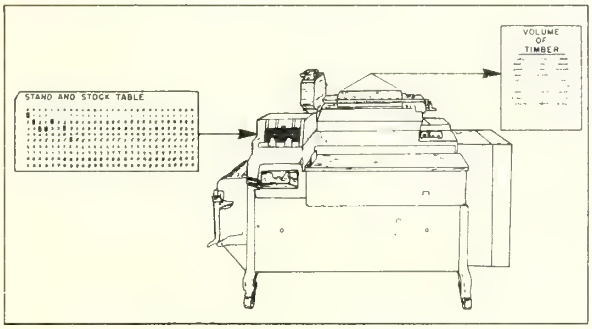
1. Acreages of forest land are estimated with the use of a dot grid placed on every third contact print along flight lines in each county. The proportion of dots falling on forest areas when applied to the gross area of the county yields a preliminary estimate of the acreage of forest land. This is later revised after certain field checks.



2. Every 5th plot listed as forest in step one is classified into forest type, stand class, and density class by careful stereoscopic analysis of the photographs. The proportion of plots falling in each classification when applied to the forest area of the county gives the area in each classification. These areas are revised following ground checking.

3. Timber cruisers make a detailed on-the-ground tally of every 3rd large sawtimber photo plot, every 8th small sawtimber, every 17th pole-timber, and every 30th seedling, sapling, and denuded plot to obtain volume, growth, cull, and mortality data, and to check accuracy of photo classification. They also check a sample of the idle and agricultural plots.

4. Growth estimates are based on increment borings taken from trees of the various diameters and species in each forest type and stand class.



5. All field data are sent to the Asheville office for editing and are placed on punch cards for machine tabulation. Statistical techniques are used to correct for changes in photo classification, and to determine final figures on areas, volumes, and growth.

DEFINITION OF TERMS

Land-Use Classes

Forest. Land bearing forest growth, or land from which the forest has been removed and which shows no evidence of any other recent land use. Subdivided into the following classes:

> Commercial: Land bearing, or capable of bearing, timber of commercial character and available now or prospectively for commercial use. -
>
> Withdrawn: Forest land in public ownership upon which commercial timber cutting is prohibited.
>
> Non-productive: Forest land of such low productivity or so inaccessible that commercial timber will not be produced.

Non-forest. Land less than five percent stocked with trees and showing evidence of non-forest use.

> Agriculture: Under cultivation or in pasture, including farm yards on active farms.
>
> Idle: Land previously cultivated or pastured but now idle or abandoned. If reverting to forest there must be less than five percent stocking of trees.
>
> Marsh: Low, boggy, non-forested land usually supporting a heavy growth of grass.
>
> Sand dunes and beach: Non-forested sand dunes or coastal beaches.
>
> Water: Includes both the small ponds and lakes less than 40 acres in size and streams, sloughs, and canals less than 10 chains in width classed as "land area" by the Bureau of the Census. Also includes the "inland water" listed by the Census. On coastal areas the water-line is the mean high tide mark; tidal flats are classed as water.
>
> Urban and other: Includes towns, suburban areas being developed for residential or other urban purposes, school yards, cemeteries, industrial sites, roads, railroads, power lines, and other rights-of-way. Scattered areas of timber within exterior boundaries of cities or villages are also included.

Forest Types

Longleaf pine. Stands in which coniferous species comprise at least 75 percent of the dominant and co-dominant trees, with longleaf pine predominating.

Other yellow pine. Stands in which coniferous species comprise at least 75 percent of the dominant and co-dominant stems with slash, loblolly, shortleaf, Virginia, or pond pine predominating.

Pine-hardwood. Mixed stands in which pine species and commercial hardwoods each comprise at least 25 percent of the dominant and co-dominant trees.

Lowland hardwood. Stands in which mixed hardwoods, or hardwoods and cypress, comprise at least 75 percent of the dominant and co-dominant trees. Found in swamps and river bottoms in the piedmont and coastal areas and on flat, poorly drained areas of rather large extent in the coastal plain.

Cypress-tupelo. Stands in which cypress and tupelo comprise at least 75 percent of the dominant and co-dominant trees.

Stand-size Classes

Saw timber. Stands containing at least 1,500 board feet net, International 1/4-inch log rule, per acre in sound, live, softwood trees 9.0 inches d.b.h. or larger or hardwood trees 11.0 inches d.b.h. or larger. Two classes of saw-timber stands are recognized:

> Large saw timber: Stands of saw timber having more than 50 percent of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.
>
> Small saw timber: Stands of saw timber having 50 percent or less of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Pole timber. Stands at least 10 percent stocked with pole-size or larger timber, at least one-half in pole sizes, and which have less than 1,500 board feet net per acre of saw timber.

Seedling and sapling. Stands less than 10 percent stocked by pole-size or larger trees and with less than 1,500 board feet net per acre, but at least 40 percent stocked with commercial species. Eight hundred seedlings or saplings per acre will be considered full stocking.

Poorly stocked and denuded. All commercial forest land not included in any of the above classes.

Diameters

D.b.h. (diameter at breast height). Stem diameter in inches, outside bark, measured at $4\frac{1}{2}$ feet above the ground.

Diameter class. All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint; e.g., trees 7.0 to and including 8.9 inches are in the 8-inch class.

Tree Classification

Sound saw-timber trees. Softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable butt log 12 feet long, or with 50 percent of the gross volume of the tree in sound saw timber.

Sound pole-timber trees. Straight-boled trees between 5.0 inches d.b.h. and saw-timber size that will eventually produce sound saw-timber trees as described above.

Cull trees. Trees that fail to qualify as sound saw timber or pole timber because of poor form, excessive limbiness, rot, or other defect.

Species Groups

Softwoods. All of the pines, eastern redcedar, Atlantic whitecedar, pondcypress, baldcypress.

Soft hardwoods. Black and water tupelos, sweetgum, soft maple, yellow-poplar, cottonwood, willow, southern magnolia.

Hard hardwoods. All of the oaks and such species as hickory, ash, sycamore, birch, beech, elm.

Volume Estimates

Board-foot volume. The volume in board feet, measured by the International 1/4-inch log rule, exclusive of defect, of that portion of saw-timber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords. The volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum diameter of 4.0 inches inside bark. Also included is the volume in limbs, in sections 4 feet long and at least 4.0 inches in diameter inside bark, of saw-timber size hardwoods and the sound volume in cull trees.

International 1/4-inch log rule. A rule for estimating the board-foot volume of four-foot log sections according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per four-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord. A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, 90 cubic feet of softwoods (wood and bark) or 80 cubic feet of hardwoods (wood and bark).

ACCURACY OF THE SURVEY

In estimating the areas of various categories of land there are two possible sources of error: (1) errors in classifying field plots or in compiling the data, and (2) sampling errors. The first arise from mistakes of judgment or technic and can be minimized by the exercise of care and skill even though it is seldom possible to evaluate them. In the present Forest Survey of South Carolina, every effort is being made to maintain a high order of accuracy in the collection and compilation of data. In the field, this takes the form of frequent checks and a continuing program of training. In the office, the work is organized to permit automatic machine verification of most of the more important operations.

Sampling errors (standard errors of estimate), on the other hand, carry no connotation of faulty work but are theoretical measures of the reliability of estimates based on the variability exhibited by sample measurements. The sampling intensity in the lower coastal plain area of South Carolina was sufficient to provide estimates of forest acreage by counties with standard errors ranging from ±1 to ±7 percent and for the survey unit as a whole of ±1 percent. This standard error of estimate indicates the probabilities are 2 out of 3 that the actual forest area of the unit is within ±1 percent of the value given, provided measurement and computing errors have introduced no bias.

In estimating timber volumes, the possible sources of error include (1) and (2) above and, in addition, (3) inaccurate measurements of tree diameter, height, form, or cull, and (4) bias resulting from improper construction, selection, or use of tree volume tables. As in the case of area determinations, every effort is being made to secure accurate measurements through frequent checks and training. The volume tables used also have been checked and were found to give reasonably accurate figures. The standard error of estimate of the board-foot volume of saw timber in the unit is ±3 percent; the errors of the individual counties range from ±6 to ±11 percent. Corresponding errors of the total volume in cords were not computed, since it seemed reasonable to assume they would be smaller than those for board feet.

Apparently, the statistics of total forest area and total volumes, even for the individual counties, can be considered reliable for general use. A word of caution is appropriate, however, regarding the accuracy of the estimates of the smaller land-use class acreages and of the finer breakdowns of forest areas and volumes. For instance, tests of the area estimates for individual stand-size classes disclose standard errors ranging from 5 to 14 percent in contrast to 1 percent for total forest land. If a further breakdown by forest types is added, another comparable decrease in accuracy occurs. Similar changes in the error of volume estimates accompany breakdowns by stand size and type or by species and tree size.

The reliability of one statistic as compared to another presented in the same or a related table can be judged roughly by its relative magnitude. In general, the larger values warrant greater confidence, while the smallest should probably be considered indicative rather than as absolute quantities. Attempts to make detailed comparisons between individual counties are especially risky. However, several counties may be grouped to produce figures sufficiently accurate for many purposes, and the detailed county tables were prepared with this in mind.

FOREST SURVEY REPORTS PUBLISHED BY SOUTHEASTERN FOREST EXPERIMENT STATION

Forest Survey Releases

No. 1 -- Forest Resources of the Northern Coastal Plain of South Carolina. 1939

No. 2 -- Forest Resources of the Piedmont Region of South Carolina. 1939

No. 3 -- Forest Resources of the Southern Coastal Plain of South Carolina. 1939

No. 4 -- Forest Resources of the Southern Coastal Plain of North Carolina. 1940

No. 5 -- Forest Resources of the Northern Coastal Plain of North Carolina. 1940

No. 6 -- Forest Resources of the Piedmont Region of North Carolina. 1940

No. 7 -- Forest Resources of the Mountain Region of North Carolina. 1941

No. 8 -- The Distribution of Commercial Forest Trees in North Carolina. 1941

No. 9 -- The Distribution of Commercial Forest Trees in South Carolina. 1941

No. 10 - The Distribution of Commercial Forest Trees in Virginia. 1942

No. 11 - Virginia's Forests. 1942

No. 12 - The Forest Situation in the Coastal Plain of Virginia. 1943

No. 13 - The Forest Situation in Piedmont Virginia. 1943

No. 14 - Preliminary Estimate of 1942 Lumber Production in the Carolinas, Virginia, West Virginia, Kentucky, and Tennessee. 1943

No. 15 - The Forest Situation in the Mountain Region of Virginia. 1943

No. 16 - Wartime Lumber Production in the Appalachian Hardwood Region, January 1942-June 1944. 1944

No. 17 - Wood Waste Available for Conversion to Ethyl Alcohol in the Columbia Area of South Carolina. 1944

No. 18 - North Carolina Forest Growth and Drain, 1937-1943. 1945

No. 19 - Approximate Forest Area and Timber Volume by County in the Carolinas and Virginia. 1945

No. 20 - South Carolina Forest Growth and Drain, 1936-1943. 1945

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia. 1946

No. 22 - Southern Forests as a Source of Pulpwood. 1947

No. 23 - 1946 Pulpwood Production by County in the Southeast. 1947

No. 24 - Southern Pulpwood Production and the Timber Supply. 1948

USDA Miscellaneous Publications

No.533 - North Carolina Forest Resources and Industries. 1944

No.552 - South Carolina Forest Resources and Industries. 1944

FOREST SURVEY RELEASE NO. 26 MARCH 15, 1948

1946 COMMODITY DRAIN BY COUNTY FROM SOUTH CAROLINA FORESTS

by

James F. McCormack, Forester
Division of Forest Economics

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE NORTH CAROLINA

I.T. HAIG, Director

PREFACE

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act, and each of the 11 Regional Forest Experiment Stations is responsible for the work in its territory. In the Southeastern States the Forest Survey is an activity in the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina, and its work is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth. Determination of the current rate of timber growth.

3. Drain. Determination of the amount of industrial and domestic wood used, and the loss resulting from fire, insects, disease, suppression, and other causes.

4. Requirements. Determination of the current and probable future requirements for all classes of forest products.

5. Analysis. Analysis of the relation of Survey findings to one another and to other economic factors as a basis for public and private policies regarding forest land use and management.

South Carolina was covered by the original Forest Survey in the period 1934-36. During the following ten-year period estimates of the changes in growing stock were made by balancing annual growth against commodity drain. During this period more adequate fire protection, better forest management practices, more intensive timber use, and other factors created changes in the growing stock which were difficult to determine and evaluate. A resurvey of the forest resources in the state was made between November 1946 and March 1948. This progress report presents information on the drain phase of the resurvey.

CONTENTS

Page

INTRODUCTION - 1

RELIABILITY OF DATA - 24

TABLES

1. Total commodity drain by county and species group, 1946 - - - - 5

2. Lumber drain by county and species of timber, 1946 - - - - - - - 6

3. Lumber drain by county and species group, 1946, in three units of measure - 9

4. Pulpwood drain by county and species group, 1946, in three units of measure - 11

5. Veneer-log drain by county and species of timber, 1946 - - - - - 13

6. Veneer-log drain by county and species group, 1946, in three units of measure - 14

7. Fuelwood production by county and type of fuelwood, 1946 - - - - 15

8. Fuelwood drain by county and species of timber, 1946 - - - - - - 17

9. Fuelwood drain by county and species group, 1946, in three units of measure - 18

10. Fence-post and miscellaneous farm use drain by county and species of timber - 19

11. Fence-post and miscellaneous farm use drain by county and species group, 1946, in number of pieces and two units of measure - - - 20

12. Miscellaneous commodity drain by county and species group, 1946, in three units of measure - - - - - - - - - - - - - - - - - - 21

13. Sampling errors of 1946 drain estimates - - - - - - - - - - - - 24

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1946 COMMODITY DRAIN BY COUNTY
FROM SOUTH CAROLINA FORESTS

In response to increasing demand, estimates of commodity drain are presented in this report by county. Commodity drain may be described as the removal or waste of sound, live, merchantable timber from the forests for commercial or domestic uses. Only materials cut for primary products such as lumber, fuelwood, and veneer are considered. Dead timber, sawmill slabs, and cull trees, which are often reported in production surveys, are excluded. Users of commodity drain data find them useful in two important ways. They are of interest as individual statistics which provide information on the type, volume, and source of material being cut for various products. They are also used in making comparisons of the amount of timber growth with the amount of timber cut. Such comparisons are usually made to estimate changes or trends in timber supply.

The statistical data presented in this release were computed from information obtained in recent production surveys and field studies covering the various commodities. The work was conducted under an experimental plan approved by the Bureau of the Budget. The procedure included several new types of field studies and new methods of computing commodity drain together with the statistical errors involved.

The magnitude of the drain created by the various commodities is shown below (fig. 1).

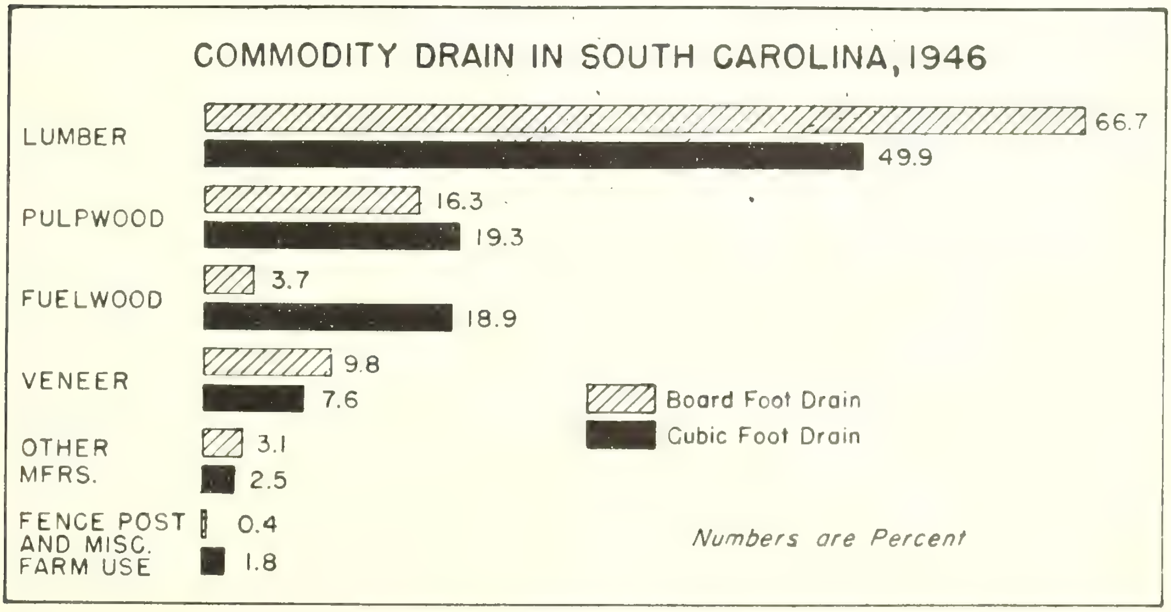

Figure 1

The basic data used in computing commodity drain were obtained through complete canvasses of sawmills, pulpmills, and other wood-using plants or producers, and through a one-percent area sample of the state covering the production of fuelwood, fence posts, and miscellaneous farm use. Data on the origin, by county, of logs used in lumber production were obtained for the first time. This proved to be an important step in determining county drain since numerous sawmills obtained logs from counties other than those in which they were found operating during the canvass. Logs or bolts used in the production of other primary products were also traced to their county of origin. Locations of sawmills and other wood-using plants are shown in figures 7 and 8.

Field studies were conducted to determine the extent of waste or overutilization resulting from current cutting practices. These studies also provided data for converting factors, and for determining the proportion of material cut from timber of various size classes.

It is believed that the total county drain statistics for all commodities except fuelwood, fence posts, and miscellaneous farm use are sufficiently accurate for general use. Data by species or species groups are of lower reliability than total figures. The sampling procedure used in the fuelwood, fence-post and other farm use survey covered only a small portion of the total state area. Serious errors may develop through the use of individual county data for these products, and such use should be avoided. Summaries of these data by groups of counties will reduce the amount of error in proportion to the extent of grouping. Further discussion of errors present in this survey appears on page 24.

The special survey of fuelwood, fence-post, and miscellaneous farm use drain was of new design and produced some interesting facts. This survey consisted of the enumeration of 196 random segments averaging about 1.5 square miles in area. Similar area segments are normally used in agricultural census work. The total production of all types of fuelwood within each segment was determined and the results were expanded to state and county totals, as indicated in table 7. In this table, fuelwood drain on forest growing stock is shown in the column entitled "Sound live timber." Tables 8 and 9 further expand this drain item by species of timber and the various units of measure. Fuelwood produced from waste at manufacturing plants, other than sawmills, is not included in any of the tables.

From a sample of 900 farms the fuelwood production per average farm was 17.7 cords. The amount of fuelwood reported consumed per average farm was 17.2 cords. Thus, the average producer consumed 97 percent of his own production. The remaining 3 percent, or about 55,000 cords, was apparently disposed of commercially or used in churches, schools, and other public buildings.

In the principal tobacco growing counties, the average farm produces about 25 cords of fuelwood. The production in the remaining counties averages approximately 15 cords per farm. The survey indicated that 28 percent of the tobacco was cured with oil heat, 5 percent with coal, and 67 percent with wood. It required an average of 2.2 cords of wood to cure one thousand pounds of tobacco. A total of approximately 243,000 cords of wood was used as fuel in tobacco barns. This volume amounted to 13 percent of all the fuelwood produced.

The production of fence posts from sound live timber amounted to nearly five-and-one-half million pieces, and for miscellaneous farm use about one million six hundred thousand pieces. The miscellaneous farm use reported consisted principally of round or hewn pole-size timber of various diameters and lengths. Approximately 88 percent of this material was produced from trees under sawlog size. It included such items as corral poles, fencing material, sills and small logs for buildings, and poles on which crops were stacked. It did not include lumber used for building or repair. This item is reported in the table on lumber drain.

Table 1 presents a summary of the drain created by all commodities. The saw-timber drain is reported only for trees of merchantable sawlog size, which is 9.0 inches and larger in diameter breast high for softwoods, and 11.0 inches and larger for hardwoods. All board-foot columns or tables are in terms of International Log Rule, 1/4-inch kerf. The tables which present data in terms of standard cords or cubic feet include all sound trees five inches or larger in diameter breast high.

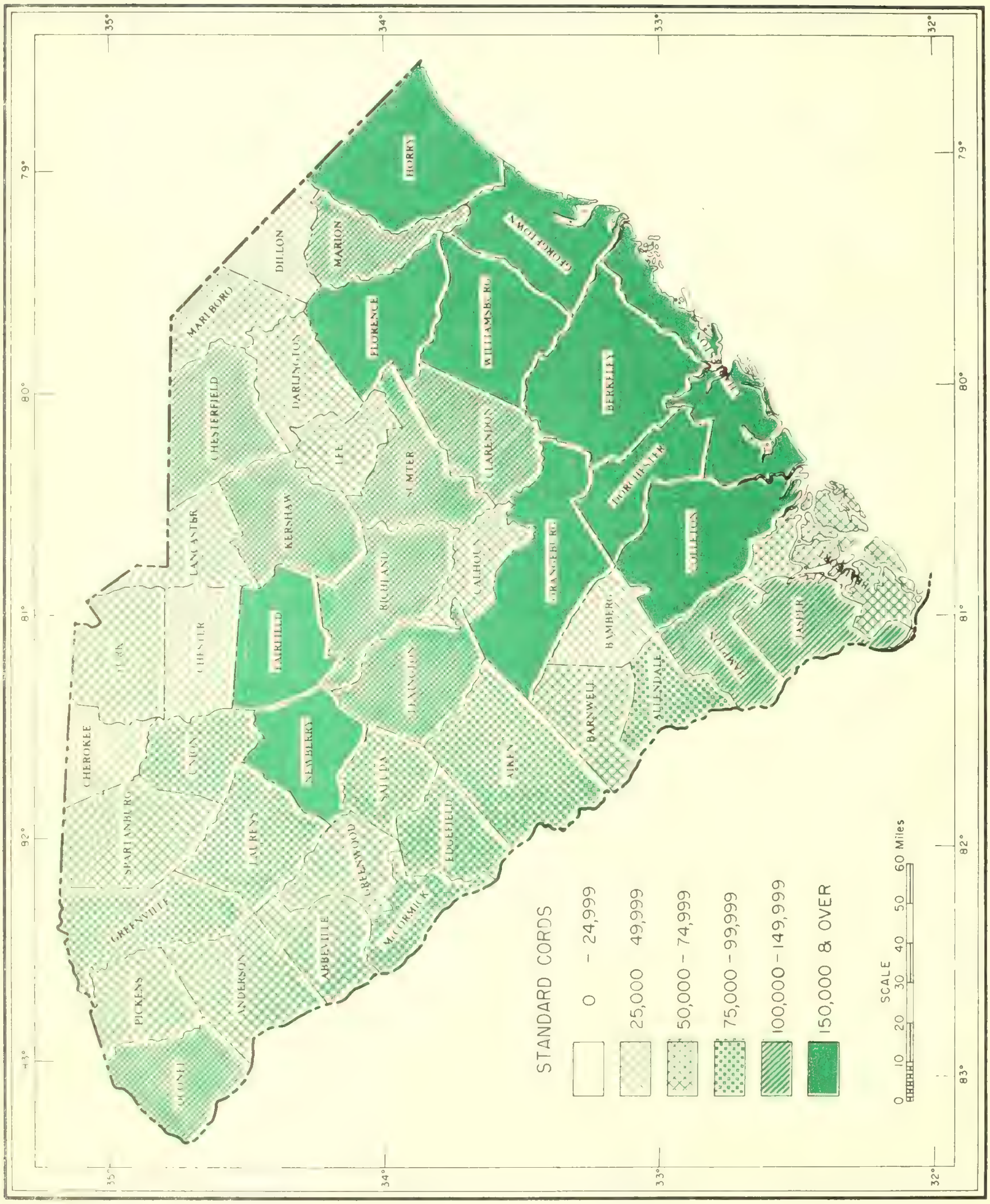

Figure 2. - Total commodity drain by county, 1946

Table 1. - Total commodity drain by county and species group, 1946

County	Saw timber			All sound trees five inches d.b.h. and larger		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Cords	Cords	Cords
Abbeville	9,835	6,182	16,017	36,995	23,846	60,841
Aiken	19,373	10,519	29,892	52,653	41,556	94,209
Allendale	12,773	11,819	24,592	43,133	32,363	75,496
Anderson	9,828	4,333	14,161	41,458	22,379	63,837
Bamberg	7,252	8,183	15,435	22,802	24,850	47,652
Barnwell	13,278	9,046	22,324	36,786	29,483	66,269
Beaufort	18,086	7,553	25,639	52,673	19,491	72,164
Berkeley	49,992	7,646	57,638	143.642	22,673	166,315
Calhoun	12,670	7,043	19,713	35,799	25,403	61,202
Charleston	69,407	14,577	83,984	183,896	49,968	233,864
Cherokee	6,406	2,771	9,177	22,937	17,145	40,082
Chester	9,317	2,828	12,145	35,853	13,893	49,746
Chesterfield	20,185	12,973	33,158	57,688	42,531	100,219
Clarendon	23,578	8,530	32,108	67,877	37,853	105,730
Colleton	48,213	20,567	68,780	131,299	55,351	186,650
Darlington	12,377	6,730	19,107	43,307	28,735	72,042
Dillon	6,571	5,899	12,470	19,101	27,083	46,184
Dorchester	52,628	14,189	66,817	157,936	39,352	197,288
Edgefield	19,539	6,979	26,518	57,152	28,408	85,560
Fairfield	37,578	5,433	43,011	130,650	26,409	157,059
Florence	35,354	18,970	54,324	115,639	142,207	257,846
Georgetown	41,996	14,208	56,204	123,455	49,397	172,852
Greenville	14,975	14,343	29,318	45,872	44,023	89,895
Greenwood	13,180	4,720	17,900	44,611	17,848	62,459
Hampton	29,471	8,528	37,999	85,579	30,447	116,026
Horry	27,332	6,626	33,958	93,382	80,454	173,836
Jasper	29,418	18,439	47,857	87,365	48,829	136,194
Kershaw	32,957	10,956	43,913	99,876	47,342	147,218
Lancaster	14,393	7,455	21,848	48,408	20,854	69,262
Laurens	13,098	4,082	17,180	56,115	32,253	88,368
Lee	10,012	6,448	16,460	30,085	29,692	59,777
Lexington	29,993	6,488	36,481	88,453	31,017	119,470
McCormick	20,822	2,456	23,278	69,465	9,067	78,532
Marion	16,032	23,605	39,637	52,010	79,487	131,497
Marlboro	9,001	11,648	20,649	22 657	36,373	59,030
Newberry	36,205	8,906	45,111	113,324	37,337	150,661
Oconee	23,952	8,682	32,634	66,282	37,399	103,681
Orangeburg	39,816	25,215	65,031	112,529	84,972	197,501
Pickens	13,262	9,469	22,731	36,868	31,859	68,727
Richland	24,304	10,823	35,127	78,615	34,259	112,874
Saluda	20,632	5,947	26,579	55,582	21,471	77,053
Spartanburg	21,838	4,789	26,627	46,830	17,625	64,455
Sumter	21,545	11,736	33,281	59,984	44,907	104,891
Union	18,258	3,781	22,039	76,315	23,408	99,723
Williamsburg	46,231	23,338	69,569	133,501	103,410	236,911
York	7,823	3,954	11,777	38,946	30,306	69,252
State total	1,070,786	449,412	1,520,198	3,255,385	1,775,015	5,030,400

Table 2. - Lumber drain by county

Line No.	County	Softwoods				
		So. Yel. Pine	Cypress	Other softwoods	Total softwoods	Oak
		Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.
1	Abbeville	8,896	-	--	8,896	1,202
2	Aiken	16,175	261		16,436	413
3	Allendale	5,157	46		5,203	206
4	Anderson	8,964	3	-	8,967	2,288
5	Bamberg	4,335	72	-	4,407	212
6	Barnwell	9,812	139	--	9,951	283
7	Beaufort	11,371	144	-	11,515	508
8	Berkeley	835	31,260	--	32,095	1,366
9	Calhoun	11,159	403	-	11,562	354
10	Charleston	57,071	450	--	57,521	1,730
11	Cherokee	5,117	-	-	5,117	724
12	Chester	3,963	--	--	3,963	182
13	Chesterfield	16,492	16	-	16,508	1,429
14	Clarendon	14,537	470	-	15,007	581
15	Colleton	31,164	1,012		32,176	1,879
16	Darlington	9,004	89	--	9,093	483
17	Dillon	3,339	163		3,502	244
18	Dorchester	32,311	1,228		33,539	2,254
19	Edgefield	14,977	211		15,188	857
20	Fairfield	13,799			13,799	814
21	Florence	27,672	916	--	28,588	2,322
22	Georgetown	18,388	4,087		22,475	1,368
23	Greenville	14,093		197	14,290	5,512
24	Greenwood	9,557	--	98	9,655	939
25	Hampton	19,564	361	-	19,925	377
26	Horry	16,385	259		16,644	922
27	Jasper	14,563	2,525	-	17,088	953
28	Kershaw	20,704	21		20,725	786
29	Lancaster	11,597			11,597	1,258
30	Laurens	9,457	3		9,460	873
31	Lee	8,363	303		8,666	415
32	Lexington	23,431	230		23,661	879
33	McCormick	9,383			9,383	577
34	Marion	6,211	258		6,469	770
35	Marlboro	8,245	134		8,379	1,804
36	Newberry	22,965	4	--	22,969	1,396
37	Oconee	23,169		516	23,685	3,191
38	Orangeburg	30,608	2,849		33,457	1,626
39	Pickens	11,392		1,837	13,229	5,103
40	Richland	13,190	255		13,445	1,592
41	Saluda	20,039	25		20,064	891
42	Spartanburg	12,313		200	12,513	1,758
43	Sumter	15,202	246	50	15,498	1,140
44	Union	11,224	5		11,229	383
45	Williamsburg	18,123	16,399		34,522	2,811
46	York	6,870		-	6,870	1,034
	State total	681,186	64,847	2,898	748,931	58,689

and species of timber, 1946.

Hardwoods						Total county drain	Line No.
Bl. gum	Red gum	Yel.poplar	Maple	Other hardwoods	Total hardwoods		
Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	
350	1,247	1,317	53	239	4,408	13,304	1
2,928	71	2,314	90	637	6,453	22,889	2
2,171	857	667	67	132	4,100	9,303	3
39	213	757	29	11	3,337	12,304	4
303	251	168	105	6	1,045	5,452	5
1,503	-	1,295	20	-	3,101	13,052	6
3,046	1,204	372	89	51	5,270	16,785	7
1,638	1,341	448	290	588	5,671	37,766	8
1,100	376	438	62	16	2,346	13,908	9
2,392	1,428	201	280	129	6,160	63,681	10
1	399	805	-	16	1,945	7,062	11
45	396	412	2	162	1,199	5,162	12
2,256	1,266	1,202	21	153	6,327	22,835	13
1,074	1,233	185	139	192	3,404	18,411	14
6,595	2,967	710	897	437	13,485	45,661	15
757	953	111	53	345	2,702	11,795	16
535	165	19	4	56	1,023	4,525	17
2,158	2,782	856	450	817	9,317	42,856	18
1,099	2,190	1,664	75	153	6,038	21,226	19
202	1,043	737	24	50	2,870	16,669	20
2,627	4,875	235	616	800	11,475	40,063	21
2,898	2,117	143	421	218	7,165	29,640	22
57	541	5,263	54	648	12,075	26,365	23
102	1,135	786	106	451	3,519	13,174	24
3,797	1,687	512	196	190	6,759	26,684	25
1,657	945	178	114	65	3,881	20,525	26
12,266	3,702	377	230	348	17,876	34,964	27
1,595	2,071	1,431	123	7	6,013	26,738	28
180	1,135	1,186	25	105	3,889	15,486	29
53	997	1,103	8	292	3,326	12,786	30
810	914	224	109	152	2,624	11,290	31
818	1,155	1,511	101	144	4,608	28,269	32
68	834	524	-	154	2,157	11,540	33
2,319	1,459	200	261	65	5,074	11,543	34
2,409	1,570	150	521	764	7,218	15,597	35
300	2,723	1,151	258	731	6,559	29,528	36
4	291	2,386	110	251	6,233	29,918	37
5,729	2,126	2,938	338	228	12,985	46,442	38
9	399	2,619	253	444	8,827	22,056	39
1,263	1,508	1,038	305	166	5,872	19,317	40
795	1,900	1,171	124	347	5,228	25,292	41
104	138	1,592	5	82	3,679	16,192	42
1,996	2,644	599	298	469	7,146	22,644	43
7	358	460	-	-	1,208	12,437	44
3,501	8,686	152	615	1,805	17,570	52,092	45
-	392	885	21	21	2,353	9,223	46
75,556	66,684	43,492	7,962	13,137	265,520	1,014,451	

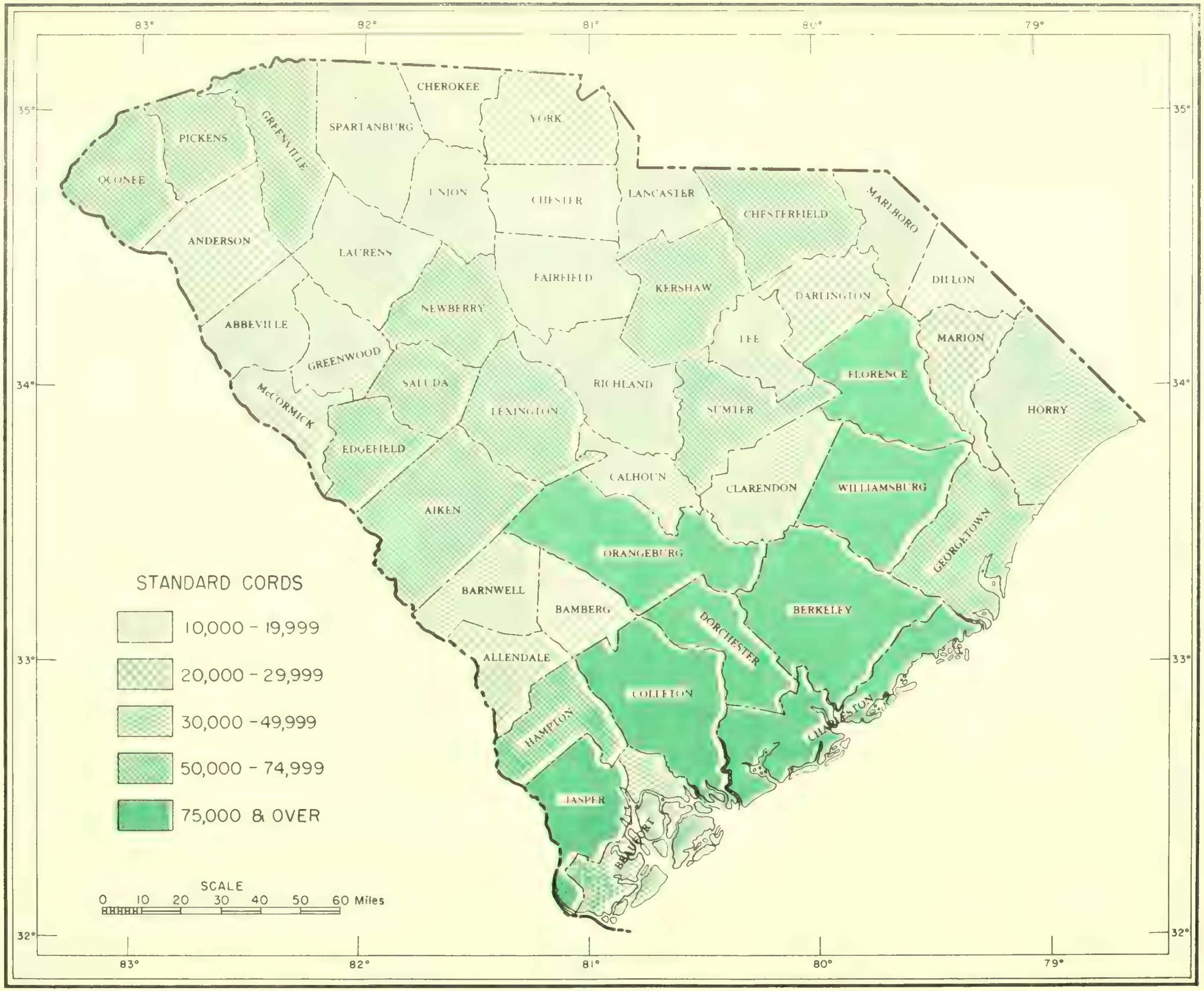

Figure 3. - Lumber drain by county, 1946

Table 3. - Lumber drain by county and species group, 1946, in three units of measure.

County	Species Group					
	Softwoods			Hardwoods		
	Standard cords	Thousand cu. ft.	Thousand bd. ft.	Standard cords	Thousand cu. ft.	Thousand bd. ft.
Abbeville	21,564	1,739	8,896	10,712	878	4,408
Aiken	39,854	3,214	16,436	15,677	1,285	6,453
Allendale	12,537	1,011	5,203	9,955	816	4,100
Anderson	21,737	1,753	8,967	8,113	665	3,337
Bamberg	10,614	856	4,407	2,538	208	1,045
Barnwell	23,969	1,933	9,951	7,528	617	3,101
Beaufort	27,739	2,237	11,515	12,798	1,049	5,270
Berkeley	77,314	6,235	32,095	13,774	1,129	5,671
Calhoun	27,850	2,246	11,562	5,697	467	2,346
Charleston	138,570	11,175	57,521	14,957	1,226	6,160
Cherokee	12,412	1,001	5,117	4,721	387	1,945
Chester	9,610	775	3,963	2,916	239	1,199
Chesterfield	40,027	3,228	16,508	15,372	1,260	6,327
Clarendon	36,158	2,916	15,007	8,272	678	3,404
Colleton	77,512	6,251	32,176	32,757	2,685	13,485
Darlington	21,898	1,766	9,093	6,564	538	2,702
Dillon	8,432	680	3,502	2,489	204	1,023
Dorchester	80,798	6,516	33,539	22,631	1,855	9,317
Edgefield	36,828	2,970	15,188	14,664	1,202	6,038
Fairfield	33,455	2,698	13,799	6,978	572	2,870
Florence	68,870	5,554	28,588	27,877	2,285	11,475
Georgetown	54,138	4,366	22,475	17,409	1,427	7,165
Greenville	34,646	2,794	14,290	29,329	2,404	12,075
Greenwood	23,411	1,888	9,655	8,552	701	3,519
Hampton	48,000	3,871	19,925	16,421	1,346	6,759
Horry	40,089	3,233	16,644	9,431	773	3,881
Jasper	41,168	3,320	17,088	43,420	3,559	17,876
Kershaw	50,245	4,052	20,725	14,603	1,197	6,013
Lancaster	28,123	2,268	11,597	9,443	774	3,889
Laurens	22,940	1,850	9,460	8,076	662	3,326
Lee	20,869	1,683	8,666	6,368	522	2,624
Lexington	57,363	4,626	23,661	11,187	917	4,608
McCormick	22,754	1,835	9,383	5,234	429	2,157
Marion	15,587	1,257	6,469	12,322	1,010	5,074
Marlboro	20,187	1,628	8,379	17,531	1,437	7,218
Newberry	55,689	4,491	22,969	15,933	1,306	6,559
Oconee	57,425	4,631	23,685	15,140	1,241	6,233
Orangeburg	80,600	6,500	33,457	31,549	2,586	12,985
Pickens	31,868	2,570	13,229	21,448	1,758	8,827
Richland	32,600	2,629	13,445	14,262	1,169	5,872
Saluda	48,645	3,923	20,064	12,700	1,041	5,228
Spartanburg	30,343	2,447	12,513	8,943	733	3,679
Sumter	37,337	3,011	15,498	17,361	1,423	7,146
Union	27,218	2,195	11,229	2,940	241	1,208
Williamsburg	83,167	6,707	34,522	42,676	3,498	17,570
York	16,653	1,343	6,870	5,722	469	2,353
State total	1,808,813	145,872	748,931	644,990	52,868	265,520

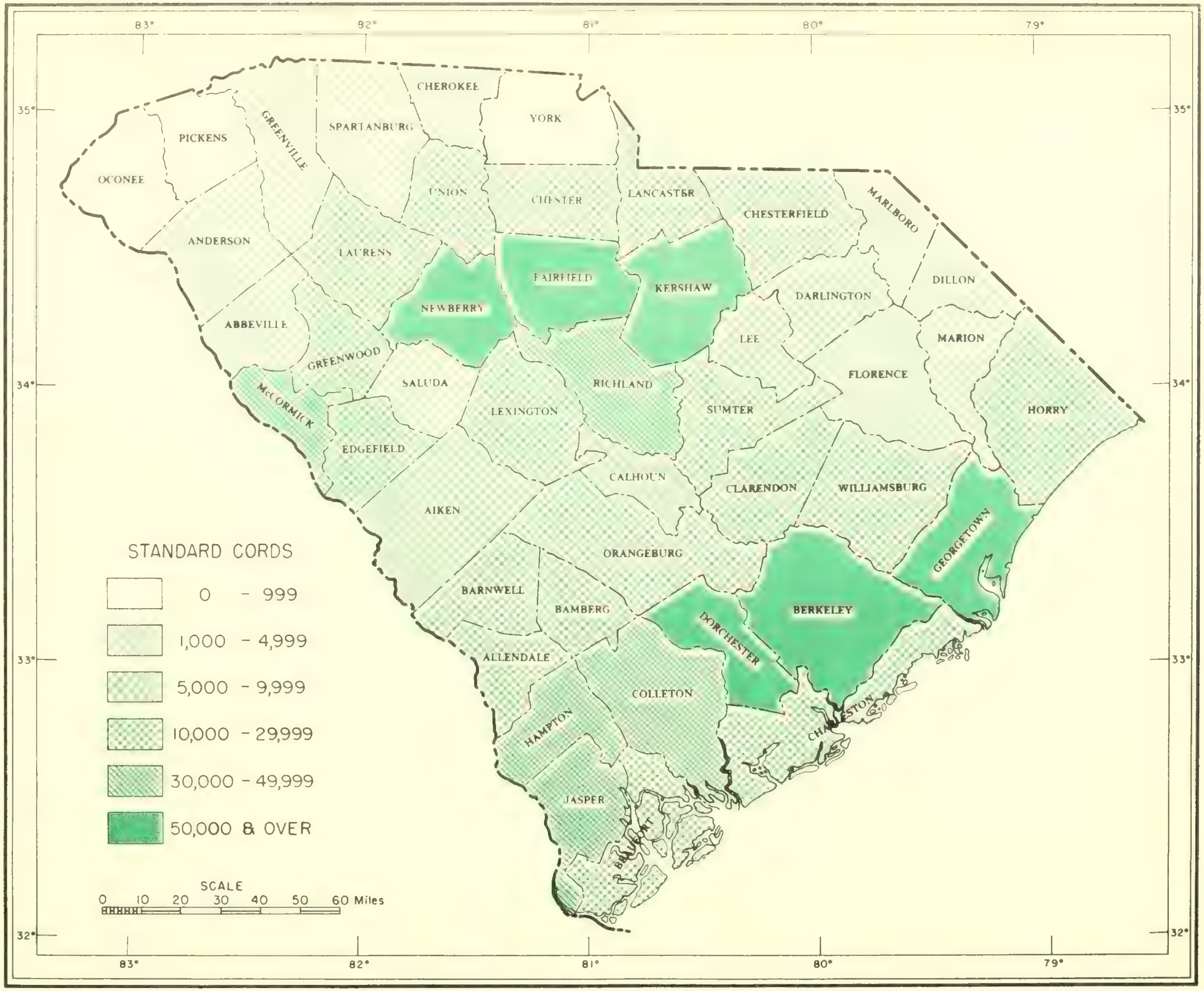

Figure 4. - Pulpwood drain by county, 1946

Table 4. - Pulpwood drain by county and species group, 1946, in three units of measure.

County	Species Group					
	Softwoods			Hardwoods		
	Standard cords	Thousand cu. ft.	Thousand bd. ft.	Standard cords	Thousand cu. ft.	Thousand bd. ft.
Abbeville	2,673	209	695	-	-	-
Aiken	9,186	718	2,388	387	31	70
Allendale	25,140	1,966	6,536	2,092	168	377
Anderson	1,021	80	265	13	1	2
Bamberg	10,688	836	2,779	71	6	13
Barnwell	9,957	779	2,589	644	52	116
Beaufort	21,292	1,665	5,536	386	31	69
Berkeley	59,777	4,675	15,542	3,835	309	690
Calhoun	3,898	305	1,013	4,335	349	780
Charleston	28,319	2,215	7,363	1,439	116	259
Cherokee	2,425	190	631	-	-	-
Chester	20,285	1,586	5,274	1,337	108	241
Chesterfield	7,361	576	1,914	4,618	372	831
Clarendon	8,251	645	2,145	3,618	291	651
Colleton	28,892	2,259	7,512	3,692	297	665
Darlington	6,709	525	1,744	1,453	117	262
Dillon	3,060	239	796	644	52	116
Dorchester	64,026	5,007	16,647	1,890	152	340
Edgefield	16,220	1,268	4,217	491	39	88
Fairfield	91,195	7,131	23,711	10,419	839	1,875
Florence	2,426	190	631	1,496	120	269
Georgetown	48,043	3,757	12,491	2,881	232	519
Greenville	1,926	151	501	52	4	9
Greenwood	12,996	1,016	3,379	1,173	94	211
Hampton	33,917	2,652	8,818	2,272	183	409
Horry	14,434	1,129	3,753	650	52	117
Jasper	33,567	2,625	8,727	1,039	84	187
Kershaw	44,377	3,470	11,538	5,772	465	1,039
Lancaster	10,585	828	2,752	1,864	150	336
Laurens	11,975	936	3,114	460	37	83
Lee	4,539	355	1,180	1,996	161	359
Lexington	23,662	1,850	6,152	1,603	129	289
McCormick	43,853	3,429	11,402	249	20	45
Marion	3,175	248	825	1,269	102	228
Marlboro	1,735	136	451	2,139	172	385
Newberry	48,335	3,780	12,567	2,539	204	457
Oconee	166	13	43	-	-	-
Orangeburg	16,387	1,281	4,261	12,309	991	2,216
Pickens	-	-	-	-	-	-
Richland	41,051	3,210	10,673	6,899	555	1,242
Saluda	1,891	148	492	1,053	85	190
Spartanburg	987	77	257	22	2	4
Sumter	13,642	1,067	3,547	2,086	168	375
Union	23,397	1,830	6,083	588	47	106
Williamsburg	28,064	2,195	7,297	1,589	128	286
York	593	46	154	195	16	35
State total	886,098	69,293	230,385	93,559	7,531	16,841

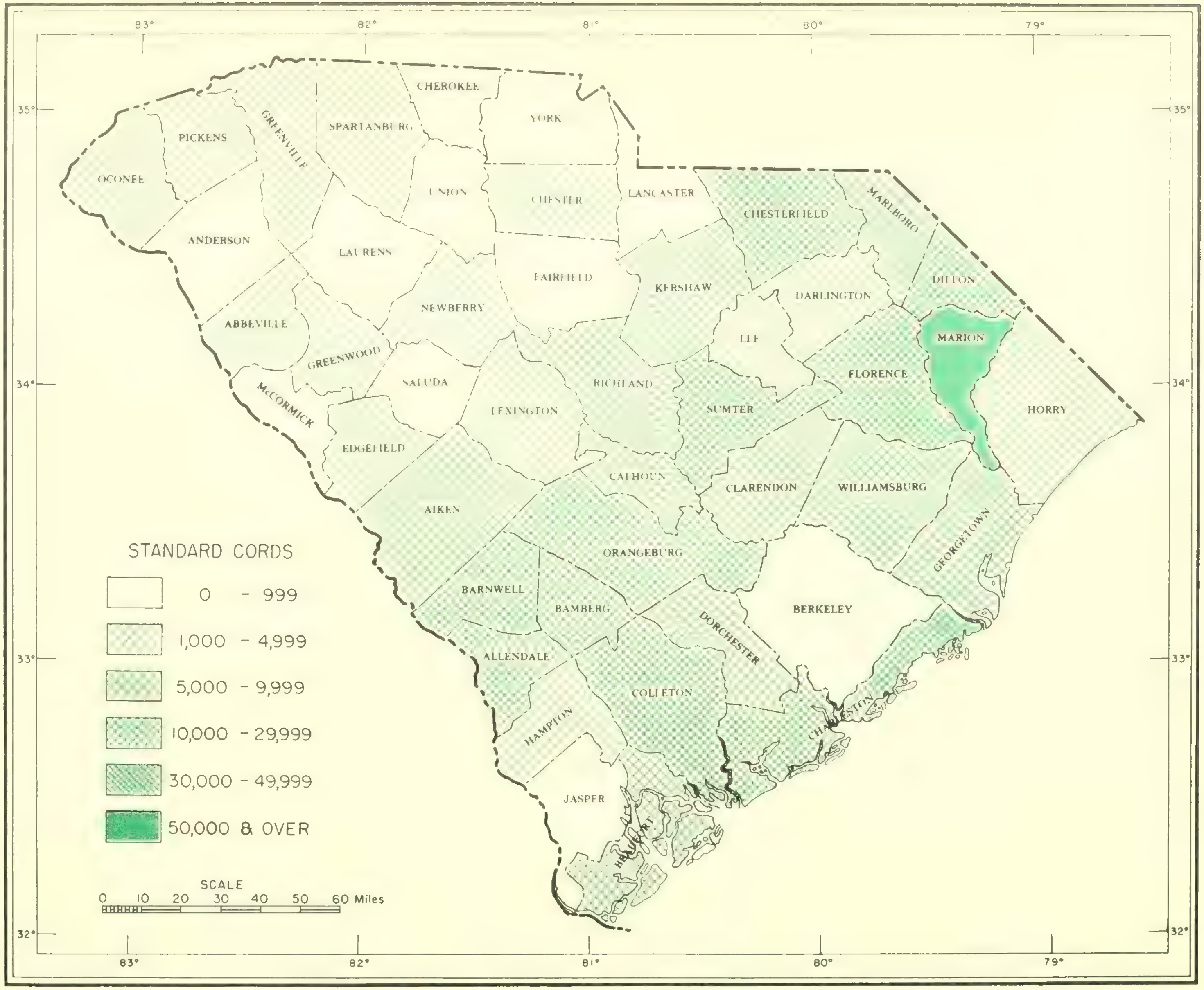

Figure 5. - Veneer-log drain by county, 1946

Table 5. - Veneer-log drain by county and species of timber, 1946.

County	Softwoods	Hardwoods					
	So. Yel. Pine	Oak	Bl. gum	Red gum	Yel.-poplar	Other hardwoods	Total county drain
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.
Abbeville	19	7	11	136	266	16	455
Aiken	243	-	1,134	1,248	628	117	3,370
Allendale	673	57	933	6,059	195	21	7,938
Anderson	-	5	37	124	258	12	436
Bamberg	-	3	2,069	2,125	1,806	19	6,022
Barnwell	711		1,874	2,374	935	427	6,321
Beaufort	1,035	-	-	1,969	147	18	3,169
Berkeley	-		155	157	45	15	372
Calhoun	54	8	874	2,077	548	93	3,654
Charleston	3,287		1,043	4,187	734	156	9,407
Cherokee			16	-	89	-	105
Chester	23	11	73	459	517	44	1,127
Chesterfield	2		2,612	1,733	832	406	5,585
Clarendon	-	19	803	1,595	1,109	69	3,595
Colleton	1,838	1	520	2,246	539	117	5,261
Darlington	2	-	1,029	829	113	61	2,034
Dillon	77		2,791	1,106	390	125	4,489
Dorchester	-	2	625	947	999	44	2,617
Edgefield	37	1	107	189	245	2	581
Fairfield		5	40	109	182	18	354
Florence	1,366		3,314	3,415	99	53	8,247
Georgetown			2,456	1,272	499	69	4,296
Greenville		11	73	603	729	58	1,474
Greenwood	39	3	48	179	345	24	638
Hampton	517	-		985	74	8	1,584
Horry	130	99	186	1,591	-	25	2,031
Jasper	-	-			-		-
Kershaw	4	1	1,316	1,318	300	512	3,451
Lancaster			33	199	122	15	369
Laurens	-	4	23	166	178	24	395
Lee	14		1,175	685	194	24	2,092
Lexington	47	-	722	558	235	16	1,578
McCormick	19		-	-	-		19
Marion	7,507	398	4,901	12,110	94	800	25,810
Marlboro	15		1,793	1,512	410	330	4,060
Newberry	-		27	513	307	53	900
Oconee		1	176	328	1,441	32	1,978
Orangeburg	236	6	3,330	2,884	1,929	501	8,886
Pickens		1	31	76	449	13	570
Richland	170		986	1,936	570	157	3,819
Saluda	18		37	55	73	-	183
Spartanburg	-	4	64	350	657	29	1,104
Sumter	357		1,448	1,946	434	269	4,454
Union		2	19	86	139	8	254
Williamsburg	141	1	2,314	1,347	187	71	4,061
York		1	10	186	131	15	343
State total	18,581[1]	651	41,228	63,969	20,173	4,886	149,488

[1] Southern yellow pine total includes 100,000 board feet of eastern red cedar.

Table 6. - Veneer-log drain by county and species group, 1946, in three units of measure.

County	Species Group					
	Softwoods			Hardwoods		
	Standard cords	Thousand cu. ft.	Thousand bd. ft.	Standard cords	Thousand cu. ft.	Thousand bd. ft.
Abbeville	58	5	19	998	86	436
Aiken	673	58	243	7,192	620	3,127
Allendale	1,856	160	673	16,716	1,441	7,265
Anderson	-	-	-	998	86	436
Bamberg	-	-	-	13,850	1,194	6,022
Barnwell	1,960	169	711	12,911	1,113	5,610
Beaufort	2,842	245	1,035	4,907	423	2,134
Berkeley	-	-	-	859	74	372
Calhoun	151	13	54	8,282	714	3,600
Charleston	9,036	779	3,287	14,082	1,214	6,120
Cherokee	-	-	-	244	21	105
Chester	58	5	23	2,540	219	1,104
Chesterfield	-	-	2	12,841	1,107	5,583
Clarendon	-	-	-	8,271	713	3,595
Colleton	5,058	436	1,838	7,876	679	3,423
Darlington	-	-	2	4,675	403	2,032
Dillon	209	18	77	10,150	875	4,412
Dorchester	-	-	-	6,020	519	2,617
Edgefield	104	9	37	1,253	108	544
Fairfield	-	-	-	812	70	354
Florence	3,758	324	1,366	15,834	1,365	6,881
Georgetown	-	-	-	9,883	852	4,296
Greenville	-	-	-	3,387	292	1,474
Greenwood	104	9	39	1,380	119	599
Hampton	1,427	123	517	2,459	212	1,067
Horry	359	31	130	4,373	377	1,901
Jasper	-	-	-	-	-	-
Kershaw	12	1	4	7,935	684	3,447
Lancaster	-	-	-	847	73	369
Laurens	-	-	-	905	78	395
Lee	35	3	14	4,779	412	2,078
Lexington	128	11	47	3,527	304	1,531
McCormick	58	5	19	-	-	-
Marion	20,648	1,780	7,507	42,096	3,629	18,303
Marlboro	35	3	15	9,303	802	4,045
Newberry	-	-	-	2,065	178	900
Oconee	-	-	-	4,547	392	1,978
Orangeburg	650	56	236	19,894	1,715	8,650
Pickens	-	-	-	1,311	113	570
Richland	464	40	170	8,398	724	3,649
Saluda	46	4	18	383	33	165
Spartanburg	-	-	-	2,540	219	1,104
Sumter	986	85	357	9,419	812	4,097
Union	-	-	-	580	50	254
Williamsburg	383	33	141	9,013	777	3,920
York	-	-	-	789	68	343
State total	51,098	4,405	18,581	301,124	25,959	130,907

Table 7. - Fuelwood production by county and type of fuelwood, 1946

County	Production per average farm	Type of fuelwood			Total county production
		Sawmill and woods waste[1]	Dead or cull trees	Sound live timber[2]	
	Std. cords	Std. cords	Std. cords	Std. cords	Std. cords
Abbeville	12.7	-	9,700	22,200	31,900
Aiken	16.1	8,600	14,700	17,000	40,300
Allendale	14.5	1,700	10,500	4,800	17,000
Anderson	9.1	3,600	8,500	28,800	40,900
Bamberg	16.4	2,600	20,900	6,100	29,600
Barnwell	10.8	6,300	6,300	5,400	18,000
Beaufort	16.0	800	6,400	2,100	9,300
Berkeley	11.0	1,300	8,700	1,800	11,800
Calhoun	19.0	-	-	10,400	10,400
Charleston	18.7	3,800	14,700	23,600	42,100
Cherokee	18.5	400	12,300	18,300	31,000
Chester	7.2	-	-	11,800	11,800
Chesterfield	9.9	12,200	2,500	18,000	32,700
Clarendon	17.4	20,200	23,900	20,700	64,800
Colleton	11.4	2,800	13,500	6,700	23,000
Darlington	13.5	1,800	5,400	25,400	32,600
Dillon	19.8	7,600	7,400	19,800	34,800
Dorchester	11.1	12,400	6,300	6,400	25,100
Edgefield	23.5	6,400	9,300	15,400	31,100
Fairfield	7.1	-	-	13,900	13,900
Florence	39.1	20,200	45,000	128,800	194,000
Georgetown	17.6	3,000	12,500	15,600	31,100
Greenville	10.1	2,500	15,500	18,900	36,900
Greenwood	16.1	9,900	6,600	13,500	30,000
Hampton	24.8	4,600	17,700	8,200	30,500
Horry	22.7	12,300	24,100	100,300	136,700
Jasper	10.4	800	6,300	8,400	15,500
Kershaw	16.0	12,100	33,100	17,500	62,700
Lancaster	24.3	4,100	1,800	17,900	23,800
Laurens	21.6	8,300	22,600	42,500	73,400
Lee	27.1	6,800	8,400	15,900	31,100
Lexington	7.9	4,400	-	21,700	26.100
McCormick	19.1	8,300	7,000	5,700	21,000
Marion	19.1	-	5,900	31,900	37,800
Marlboro	20.8	10,400	1,600	6,900	18,900
Newberry	22.1	10,000	3,900	23,300	37,200
Oconee	16.6	9,600	23,700	23,700	57,000
Orangeburg	20.8	2,000	21,700	27,100	50,800
Pickens	13.3	1,700	7,900	13,100	22,700
Richland	10.1	-	100	9,000	9,100
Saluda	11.0	200	-	11,500	11,700
Spartanburg	17.9	4,200	22,900	21,000	48,100
Sumter	20.5	4,300	15,500	17,600	37,400
Union	26.9	1,600	30,200	43,700	75,500
Williamsburg	24.5	18,900	41,600	52,800	113,300
York	19.6	5,500	7,400	41,800	54,700
State total	17.7	258,200	564,000	1,016,900	1,839,100

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[1] Includes sawmill slabs, edgings, etc., and material cut from tops after logging operations. Does not include mill waste from other manufacturing plants

[2] Drain on forest growing stock.

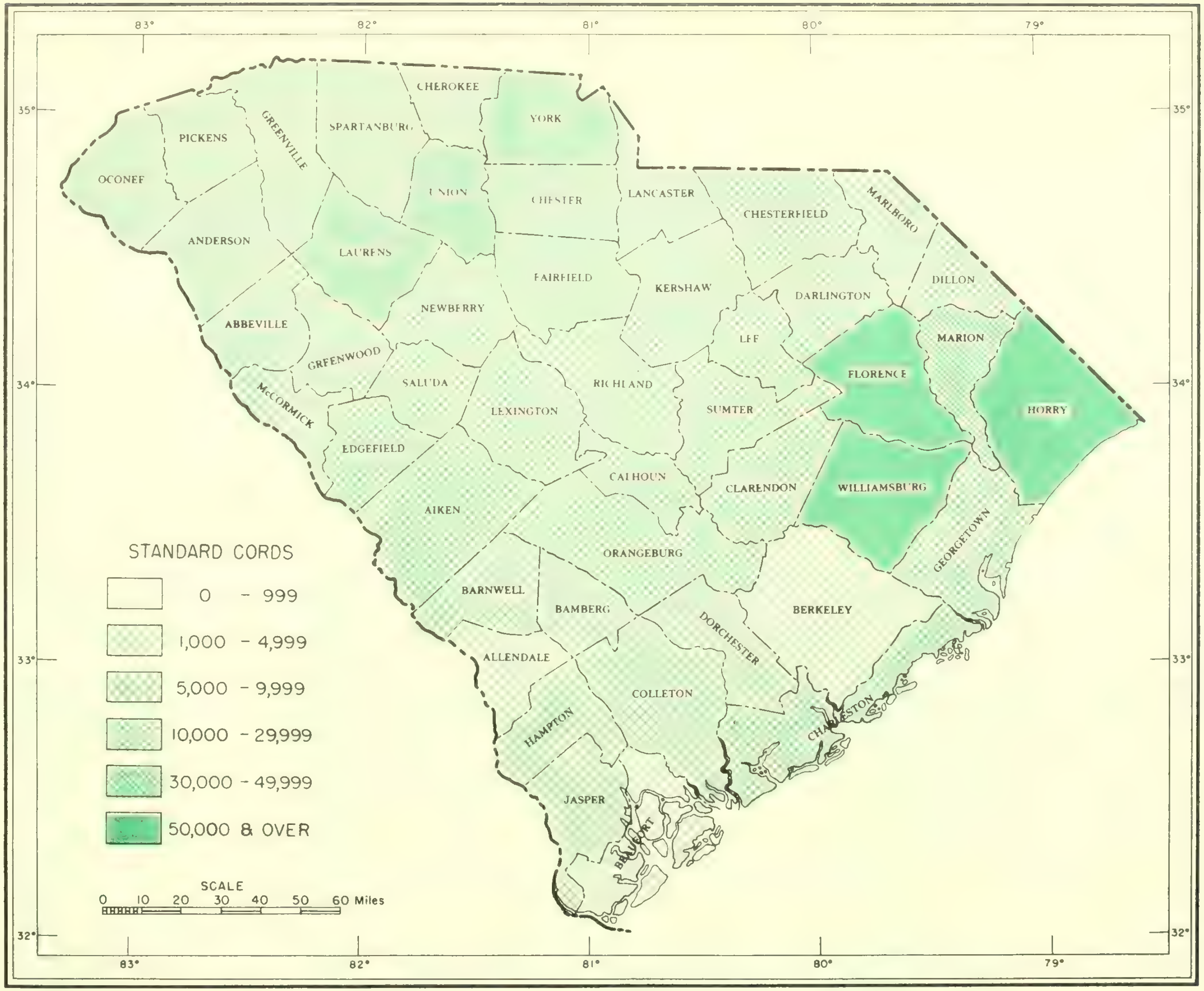

Figure 6. - Fuelwood drain by county, 1946

Table 8. - Fuelwood drain[1/] by county and species of timber, 1946

County	Softwoods	Hardwoods					Total county drain
	So. Yel. Pine	Oak	Bl. gum	Red gum	Yel.-Poplar	Other hardwoods	
	Std. cords	Std. cords	Std. cords	Std. cords	Std. cords	Std. cords	Std. cords
Abbeville	11,600	9,800	200	200	-	400	22,200
Aiken	1,500	14,500	-	-	-	1,000	17,000
Allendale	1,200	3,600	-	-	-	-	4,800
Anderson	18,200	9,000	-	200	-	1,400	28,800
Bamberg	800	2,200	3,100	-	-	-	6,100
Barnwell	-	3,700	1,000	-	-	700	5,400
Beaufort	800	1,300	-	-	-	-	2,100
Berkeley	-	1,700	100	-	-	-	1,800
Calhoun	3,400	4,700	-	500	-	1,800	10,400
Charleston	7,500	11,200	3,600	400	-	900	23,600
Cherokee	6,900	8,500	-	-	-	2,900	18,300
Chester	4,800	2,900	-	2,500	300	1,300	11,800
Chesterfield	9,000	6,500	1,800	-	500	200	18,000
Clarendon	6,200	7,600	5,300	900	-	700	20,700
Colleton	2,300	3,500	500	300	-	100	6,700
Darlington	13,700	8,000	2,200	1,200	100	200	25,400
Dillon	6,900	5,500	5,800	400	400	800	19,800
Dorchester	2,800	1,100	2,500	-	-	-	6,400
Edgefield	3,900	6,700	-	3,000	300	1,500	15,400
Fairfield	5,700	4,800	-	1,700	100	1,600	13,900
Florence	34,200	47,100	30,600	12,700	400	3,800	128,800
Georgetown	1,400	10,800	2,100	1,300	-	-	15,600
Greenville	8,400	5,200	-	300	3,200	1,800	18,900
Greenwood	7,200	4,800	-	1,000	-	500	13,500
Hampton	300	7,900	-	-	-	-	8,200
Horry	35,600	36,400	21,900	3,000	200	3,200	100,300
Jasper	5,500	2,200	300	100	200	100	8,400
Kershaw	4,500	10,500	1,800	300	400	-	17,500
Lancaster	9,300	4,400	400	2,100	-	1,700	17,900
Laurens	20,600	11,700	-	9,300	-	900	42,500
Lee	3,500	9,900	2,300	-	-	200	15,900
Lexington	7,100	12,800	-	1,200	-	600	21,700
McCormick	2,600	1,900	-	300	-	900	5,700
Marion	10,600	7,500	1,700	8,200	-	3,900	31,900
Marlboro	600	3,500	2,200	200	100	300	6,900
Newberry	7,200	9,800	500	3,500	600	1,700	23,300
Oconee	7,800	12,900		300	600	2,100	23,700
Orangeburg	9,300	14,200	3,400	-	-	200	27,100
Pickens	4,800	5,300	300	300	1,100	1,300	13,100
Richland	4,300	1,800		1,900	100	900	9,000
Saluda	4,800	4,200	-	1,200	-	1,300	11,500
Spartanburg	15,300	5,000	400	300	-	-	21,000
Sumter	4,100	7,600	2,800	2,100	500	500	17,600
Union	25,200	18,500			-	-	43,700
Williamsburg	9,300	28,100	6,000	6,800	-	2,600	52,800
York	19,200	15,000		2,800	1,100	3,700	41,800
State total	369,900	415,800	102,800	70,500	10,200	47,700	1,016,900

1/ Material produced from sound live timber.

Table 9. - Fuelwood drain by county and species group, 1946, in three units of measure.

County	Species Group					
	Softwoods			Hardwoods		
	Standard cords	Thousand cu. ft.	Thousand bd. ft.	Standard cords	Thousand cu. ft.	Thousand bd. ft.
Abbeville	11,600	849	225	10,600	787	789
Aiken	1,500	112	185	15,500	1,148	869
Allendale	1,200	86	361	3,600	270	77
Anderson	18,200	1,331	596	10,600	783	-
Bamberg	800	62	66	5,300	393	88
Barnwell	-	-	-	5,400	402	219
Beaufort	800	60	-	1,300	96	80
Berkeley	-	-	-	1,800	131	103
Calhoun	3,400	246	41	7,000	523	285
Charleston	7,500	544	1,204	16,100	1,198	1,504
Cherokee	6,900	506	658	11,400	844	700
Chester	4,800	346	57	7,000	521	284
Chesterfield	9,000	660	1,761	9,000	662	211
Clarendon	6,200	455	614	14,500	643	265
Colleton	2,300	166	115	4,400	327	82
Darlington	13,700	1,000	1,538	11,700	868	187
Dillon	6,900	500	2,196	12,900	964	348
Dorchester	2,800	201	391	3,600	268	142
Edgefield	3,900	283	97	11,500	859	309
Fairfield	5,700	412	68	8,200	611	334
Florence	34,200	2,495	4,427	94,600	7,022	307
Georgetown	1,400	102	127	14,200	1,055	646
Greenville	8,400	613	184	10,500	781	762
Greenwood	7,200	530	88	6,300	466	254
Hampton	300	22	55	7,900	586	-
Horry	35,600	2,504	6,712	64,700	4,806	720
Jasper	5,500	402	979	2,900	214	59
Kershaw	4,500	324	605	13,000	966	-
Lancaster	9,300	677		8,600	639	408
Laurens	20,600	1,499	501	21,900	1,626	278
Lee	3,500	256	87	12,400	921	216
Lexington	7,100	520	133	14,600	1,085	60
McCormick	2,600	189	-	3,100	229	116
Marion	10,600	775	1,231	21,300	1,577	-
Marlboro	600	48	156	6,300	467	-
Newberry	7,200	527	229	16,100	1,193	936
Oconee	7,800	569	-	15,900	1,179	180
Orangeburg	9,300	678	467	17,800	1,319	369
Pickens	4.800	354	33	8,300	616	53
Richland	4,300	313	16	4,700	352	60
Saluda	4,800	351	58	6,700	497	271
Spartanburg	15,300	1,937	9,068	5,700	427	-
Sumter	4,100	298	912	13,500	1,003	69
Union	25,200	1,842	946	18,500	1,373	2,164
Williamsburg	9,300	678	1,518	43,500	3,226	978
York	19,200	1,398	618	22,600	1,680	1,188
State total	369,900	27,721	39,323	647,000	47,603	16,970

Table 10. - Fence-post and miscellaneous farm use[1] drain by county and species of timber, 1946.

County	Softwoods			Hardwoods			Total county drain
	So. Yel. Pine	Cypress	Cedar	Oak	Gum	Other hardwoods	
	Std. cords	Std. cords	Std. cords	Std. cords	Std. cords	Std. cords	Std. cords
Abbeville	100	-	1,000	-	-	-	1,100
Aiken	400	-	1,000	700	400	1,700	4,200
Allendale	100	2,300	-	-	-	-	2,400
Anderson	200	-	300	800	-	300	1,600
Bamberg	200	500	-	400	100	100	1,300
Barnwell	700	200	-	700	500	1,800	3,900
Beaufort	-	-	-	100	-	-	100
Berkeley	100	-	-	-	-	-	100
Calhoun	500	-	-	-	-	-	500
Charleston	300	-	-	100	1,100	700	2,200
Cherokee	100	-	1,100	600	-	100	1,900
Chester	300	-	800	100	-	-	1,200
Chesterfield	1,300	-	-	400	200	100	2,000
Clarendon	1,700	600	-	200	1,000	100	3,600
Colleton	400	-	-	200	400	100	1,100
Darlington	600	400	-	300	300	100	1,700
Dillon	500	-	-	200	500	200	1,400
Dorchester	4,900	-	-	-	300	100	5,300
Edgefield	-	-	100	300	100	100	600
Fairfield	300	-	-	-	-	-	300
Florence	5,700	-	-	600	1,600	200	8,100
Georgetown	1,800	300	-	400	-	-	2,500
Greenville	900	-	-	400	-	300	1,600
Greenwood	700	-	200	-	-	-	900
Hampton	-	1,500	-	400	100	-	2,000
Horry	2,100	800	-	400	400	500	4,200
Jasper	100	-	-	100	400	-	600
Kershaw	400	-	-	600	4,000	400	5,400
Lancaster	200	-	200	100	-	-	500
Laurens	200	-	400	600	100	200	1,500
Lee	800	-	-	900	300	200	2,200
Lexington	-	-	200	-	-	100	300
McCormick	-	-	200	-	100	-	300
Marion	1,400	600		100	2,400	-	4,500
Marlboro	100	-	-	200	800	100	1,200
Newberry	100	-	2,000	-	-	700	2,800
Oconee	300	-	100	1,300	-	200	1,900
Orangeburg	600	1,000		300	600	100	2,600
Pickens	100	-	100	500	-	200	900
Richland	100	-	100	-	-	-	200
Saluda	-	-	200	100	-	200	500
Spartanburg	100	-	100	300	-	100	600
Sumter	600	100	-	500	1,800	100	3,100
Union	200	-	300	500	-	300	1,300
Williamsburg	5,400	100		4,700	900	-	11,100
York	1,600		900	700	100	200	3,500
State total	36,200	8,400	9,300	18,800	18,500	9,600	100,800

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[1] Principally round poles of various diameters and lengths

Table 11. - Fence post and miscellaneous farm use[1] drain, by county and species group, 1946, in number of pieces and two units of measure.

County	Pieces		Species group			
	Fence posts	Other pieces	Softwoods		Hardwoods	
	1000 pieces	1000 pieces	Standard cords	Thousand cu. ft.	Standard cords	Thousand cu. ft.
Abbeville	186	8	1,100	76	2/	3
Aiken	223	82	1,400	101	2,800	192
Allendale	88	15	2,400	166	2/	1
Anderson	165	9	500	35	1,100	74
Bamberg	69	11	700	46	600	46
Barnwell	81	100	900	63	3,000	213
Beaufort	-	3	-	-	100	5
Berkeley	3	3	100	4	2/	3
Calhoun	60	4	500	35	-	-
Charleston	139	4	300	18	1,900	133
Cherokee	229	17	1,200	89	700	44
Chester	199	22	1,100	77	100	7
Chesterfield	104	26	1,300	91	700	48
Clarendon	37	91	2,300	155	1,300	95
Colleton	74	26	400	28	700	47
Darlington	59	24	1,000	69	700	53
Dillon	61	46	500	37	900	62
Dorchester	74	91	4,900	341	400	29
Edgefield	77	3	100	9	500	34
Fairfield	76	2/	300	21	2/	1
Florence	201	160	5,700	400	2,400	167
Georgetown	91	45	2,100	144	400	33
Greenville	102	33	900	63	700	48
Greenwood	[illegible]	15	900	63	-	-
Hampton	90	58	1,500	104	500	35
Horry	302	90	2,900	199	1,300	93
Jasper	65	3	100	4	500	37
Kershaw	500	68	400	29	5,000	346
Lancaster	44	12	400	25	100	6
Laurens	180	18	600	43	900	63
Lee	93	64	800	54	1,400	101
Lexington	37	2/	200	13	100	7
McCormick	47	17	200	19	100	5
Marion	30	53	2,000	140	2,500	177
Marlboro	19	27	100	7	1,100	76
Newberry	324	1	2,100	147	700	51
Oconee	231	20	400	27	1,500	103
Orangeburg	172	41	1,600	115	1,000	68
Pickens	148	10	200	16	700	51
Richland	10	7	200	14	-	-
Saluda	62	1	200	12	300	24
Spartanburg	67	8	200	18	400	28
Sumter	103	53	700	51	2,400	165
Union	143	8	500	35	800	53
Williamsburg	162	157	5,500	386	5,600	394
York	122	100	2,500	176	1,000	72
State total	5,410	1,654	53,900	3,765	46,900	3,293

1/ Principally round poles of various diameters and lengths.

2/ Less than 500 pieces or 50 standard cords.

Table 12. - Miscellaneous[1/] commodity drain by county and species group, 1946, in three units of measure

County	Species group					
	Softwoods			Hardwoods		
	Standard cords	Thousand cu. ft.	Thousand bd. ft.	Standard cords	Thousand cu. ft.	Thousand bd. ft.
Abbeville	-	-	-	1,536	120	546
Aiken	40	3	13		-	-
Allendale	-	-	-	-	-	-
Anderson	-	-	-	1,555	121	546
Bamberg	-	-	-	2,491	211	1,015
Barnwell		-	-	-	-	-
Beaufort	-	-	-	-	-	-
Berkeley	6,451	485	2,355	2,405	186	810
Calhoun	-	-	-	89	7	32
Charleston	171	14	32	1,490	115	495
Cherokee	-	-	-	80	6	21
Chester	-	-	-	-	-	-
Chesterfield	-	-		-	-	-
Clarendon	14,968	1,134	5,660	1,892	150	615
Colleton	17,137	1,307	6,572	5,926	477	2,052
Darlington	-	-	-	3,643	314	1,547
Dillon	-	-	-	-	-	-
Dorchester	5,412	415	2,051	4,811	387	1,773
Edgefield	-	-		-	-	-
Fairfield	-	-		-	-	-
Florence	685	56	129	-	-	-
Georgetown	17,774	1,357	6,903	4,624	367	1,497
Greenville	-	-	-	55	4	-
Greenwood	-	-	-	443	34	137
Hampton	435	35	156	895	71	293
Horry	-	-	-	-	-	-
Jasper	7,030	531	2,624	970	77	314
Kershaw	342	28	65	1,032	89	439
Lancaster	-				-	
Laurens	-	-	-	12	1	
Lee	342	28	65	2,749	237	1,171
Lexington	-	-		-		-
McCormick	-		-	384	30	136
Marion	-	-	-	-	-	-
Marlboro	-		-	-	-	-
Newberry	-	-		-	-	-
Oconee	491	39	224	312	24	81
Orangeburg	3,992	305	1,339	2,420	206	994
Pickens	-	-		100	7	-
Richland	-	-	-		-	
Saluda	-	-	-	335	25	93
Spartanburg		-	-	20	1	-
Sumter	3,219	242	1,177	141	11	49
Union	-			-	-	-
Williamsburg	7,087	534	2,556	1,032	89	439
York	-				-	-
State total	85,576	6,513	31,921	41,442	3.367	15,095

1/ Includes cooperage, dimension, handles, hewn crossties, poles, piling, and mine timbers.

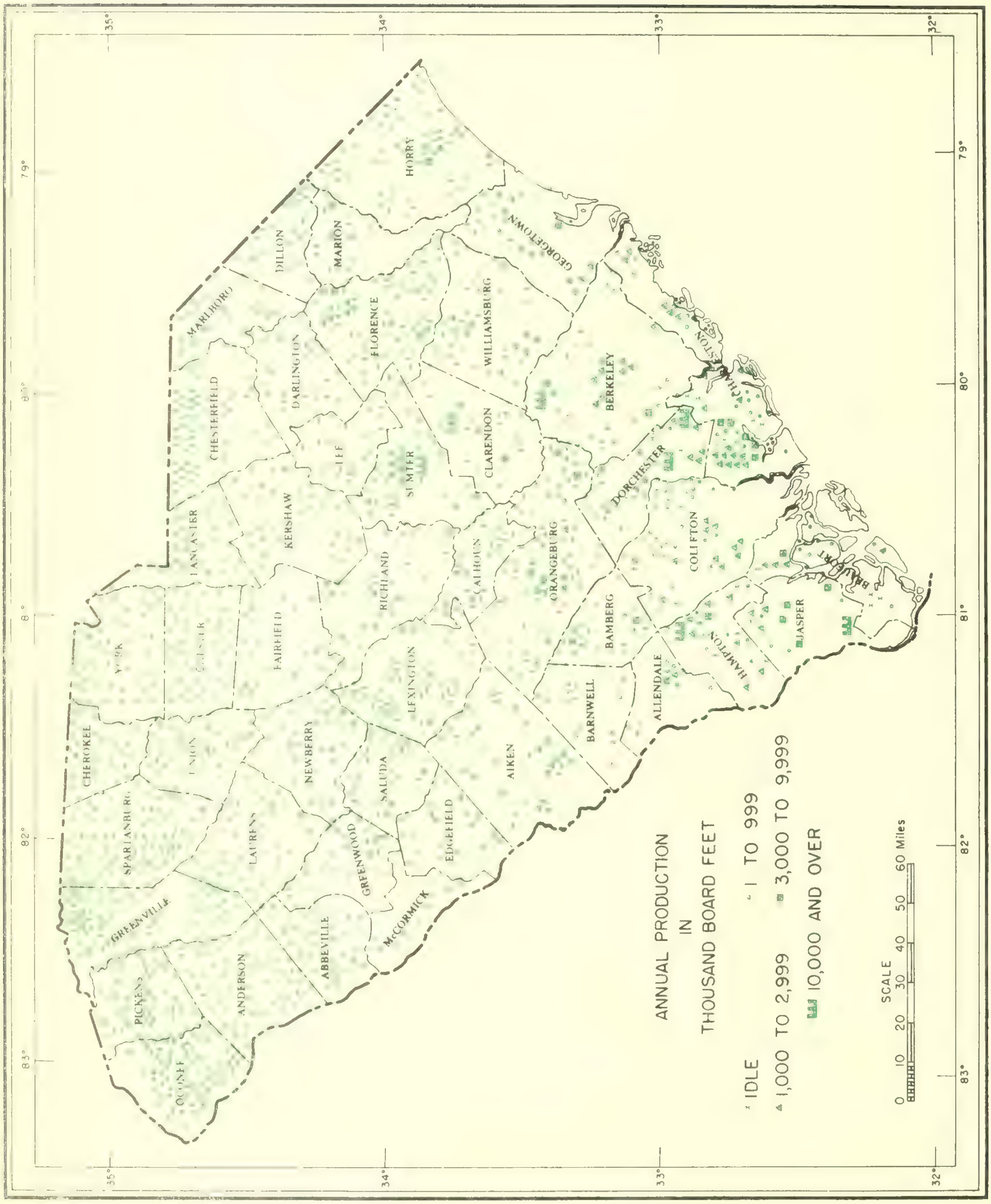

Figure 7. - Sawmill location map, 1946

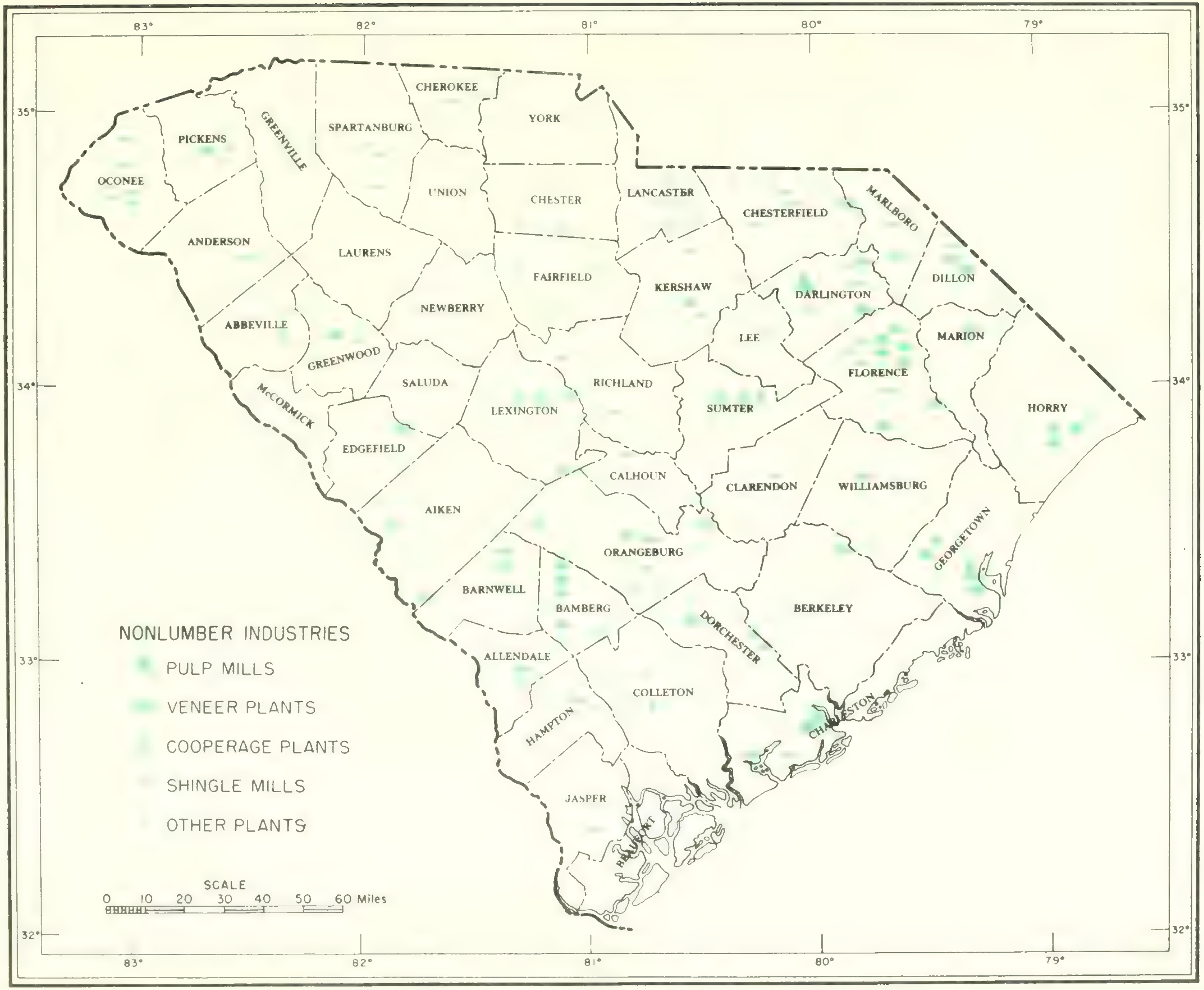

Figure 8. - Nonlumber plant location map, 1946

Reliability of Data

The principal sources of error in surveys of the type used to obtain basic data for this report are: (1) reporting errors, (2) canvassing errors, (3) errors in compiling the data, and (4) sampling errors. In many cases estimates of production must be accepted in the absence of adequate bookkeeping records or knowledge of what was actually produced. This is particularly true of reports for small manufacturing establishments and for fuelwood, fence posts, and other farm use commodities. Most reporting errors stem from this source and no measure of their magnitude is available. Canvassing errors are failures to obtain necessary field reports. Reporting, canvassing, and compilation errors were held to a minimum through the use of trained enumerators, check surveys of the original field data, and verification of all computations.

Sampling errors (standard errors of estimates) are the only measurable errors involved. They indicate the reliability of estimates based on the variance or individual deviations of the sample data. The table below shows the sampling error of cubic-foot estimates for each commodity. These errors are applicable only to the total state statistics. They are small for the manufactured items since no sampling errors were present in canvasses for production data.

Table 13. - Sampling errors of 1946 drain estimates.

Commodity	Error of cubic-foot estimates
	Percent
Lumber	± 1.8
Pulpwood	± 2.1
Veneer	± 3.8
Other manufactures	± 3.4
Fuelwood production	± 7.2
Fuelwood drain	± 8.4
Fence posts and misc. farm use	±11.4
Total state drain	1.9

Total county statistics for all items except fuelwood, fence posts, and miscellaneous farm use are of a slightly lower order of reliability. Species data are of still lower reliability. However, these statistics should be sufficiently accurate for general use.

It is possible for the sampling error of individual county fuelwood production estimates to vary between 35 and 70 percent. This is due to the relatively small number of area segments enumerated in each county. When fuelwood production data for as many as ten counties are summarized, the sampling error should not exceed 16 percent. Estimates of individual county drain for fuelwood and fence posts are less accurate than for production. The combined sampling errors for all products indicate that the total state drain estimate probably (chances are 2 out of 3) does not differ from the actual drain by more than ±1.9 percent or 7567 thousand cubic feet. The estimate of error disregards any reporting error involved.

FOREST SURVEY REPORTS PUBLISHED BY SOUTHEASTERN FOREST EXPERIMENT STATION

Forest Survey Releases

No. 1 - Forest Resources of the Northern Coastal Plain of South Carolina. 1939
No. 2 - Forest Resources of the Piedmont Region of South Carolina. 1939
No. 3 Forest Resources of the Southern Coastal Plain of South Carolina. 1939
No. 4 Forest Resources of the Southern Coastal Plain of North Carolina. 1940
No. 5 Forest Resources of the Northern Coastal Plain of North Carolina. 1940
No. 6 - Forest Resources of the Piedmont Region of North Carolina. 1940
No. 7 - Forest Resources of the Mountain Region of North Carolina. 1941
No. 8 The Distribution of Commercial Forest Trees in North Carolina. 1941
No. 9 - The Distribution of Commercial Forest Trees in South Carolina. 1941
No. 10 - The Distribution of Commercial Forest Trees in Virginia. 1942
No. 11 - Virginia's Forests. 1942
No. 12 The Forest Situation in the Coastal Plain of Virginia. 1943
No. 13 - The Forest Situation in Piedmont Virginia. 1943
No. 14 Preliminary Estimate of 1942 Lumber Production in the Carolinas, Virginia, West Virginia, Kentucky, and Tennessee. 1943
No. 15 - The Forest Situation in the Mountain Region of Virginia. 1943
No. 16 Wartime Lumber Production in the Appalachian Hardwood Region, January 1942-June 1944. 1944
No. 17 - Wood Waste Available for Conversion to Ethyl Alcohol in the Columbia Area of South Carolina. 1944
No. 18 - North Carolina Forest Growth and Drain, 1937 1943. 1945
No. 19 - Approximate Forest Area and Timber Volume by County in the Carolinas and Virginia. 1945
No. 20 - South Carolina Forest Growth and Drain, 1936-1943. 1945
No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia. 1946
No. 22 - Southern Forests as a Source of Pulpwood. 1947
No. 23 - 1946 Pulpwood Production by County in the Southeast. 1947
No. 24 - Southern Pulpwood Production and the Timber Supply. 1948
No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina. 1948

USDA Miscellaneous Publications

No.533 - North Carolina Forest Resources and Industries. 1944
No.552 - South Carolina Forest Resources and Industries. 1944

FOREST SURVEY RELEASE NO. 27

AUGUST 10, 1948

1947 PULPWOOD PRODUCTION BY COUNTY IN THE SOUTHEAST

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by

James F. McCormack, Forester
Division of Forest Economics

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA

I.T. HAIG, Director

PREFACE

Through the McSweeny-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act, and each of the 11 Regional Forest Experiment Stations is responsible for the work in its territory. In the Southeastern States the Forest Survey is an activity in the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth. Determination of the current rate of timber growth.

3. Drain. Determination of the amount of industrial and domestic wood used, and the total loss resulting from fire, insects, disease, suppression, and other causes.

4. Requirements. Determination of the current and probably future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

This progress report summarizes information on the 1947 production of pulpwood obtained in the course of compiling annual forest drain statistics by states and survey units.

CONTENTS

Page

INTRODUCTION - 1

TABLES

1. Pulpwood production in the Southeast by state and survey unit, 1947 - 2
2. Pulpwood production by county in Virginia, 1947 - - - - - - - - - 5
3. Pulpwood production by county in North Carolina, 1947 - - - - - - 8
4. Pulpwood production by county in South Carolina, 1947 - - - - - 11
5. Pulpwood production by county in Georgia, 1947 - - - - - - - - - - 13
6. Pulpwood production by county in Florida, 1947 - - - - - - - - - - 17

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The production statistics contained in this release could not have been published without help from many sources. The author gratefully acknowledges the cooperation and assistance provided in the collection of the basic field information by the management of all reporting pulpmills, and by James W. Cruikshank and John J. Zirkle, staff members of the Southeastern Station. Acknowledgment is also due to Mrs. Christine Johnston, Miss Camilla Young, and other members of the Southeastern Station for assistance in compiling the statistics.

1947 PULPWOOD PRODUCTION BY COUNTY IN THE SOUTHEAST

This statistical release presents data by county on volume and kind of pulpwood produced during 1947 in Virginia, North Carolina, South Carolina, Georgia, and Florida. It is third in a series of annual reports on pulpwood production published by the Southeastern Forest Experiment Station. The first report covered 1945 production in the Carolinas and Virginia, and the 1946 report covered all five states.

These data were compiled from information furnished by all the pulp companies located in, or drawing wood from, the five-state Station territory. Each company reported its total production by county, or by shipping points which were used to assign production to counties. Therefore, these data show the approximate production for some counties and should not be accepted as free of error. However, errors in assigning production to counties tend to be compensating, and production summaries for groups of counties, survey units, or states will be sufficiently accurate for general use. The maps showing production by counties are believed to be accurate since the class intervals are broad enough to compensate for errors in the individual county data.

A total of 11,041 cords of sawmill slabs and 20,462 cords of veneer cores used as pulpwood were listed in the company reports. During compilation of the data, these volumes were removed so that the tables would show, for softwood and hardwood species groups, only the production from sound live timber. The chestnut wood production is, of course, entirely from dead timber.

All volumes are reported in terms of the 128 cubic-foot standard cord. The softwood volume includes all of the southern yellow pines and also a small amount of hemlock in North Carolina Survey Unit 4. About ninety percent of the hardwood production is made up of blackgum and sweetgum with the blackgums predominating. The remainder is principally soft maple, yellow-poplar, and species of oak. The four survey units in South Carolina for which 1946 production data were published have been changed back to the three original units, since users of these data found difficulty in making comparisons with previously published information.

A new map (fig. 1) showing the intensity of pine pulpwood production by county in relation to pine growing stock is included in this release. Its purpose is to show areas of heavy drain on growing stock which may or may not be correlated with areas of heavy production. This map is based on pine pulpwood production only and does not include drain created by lumber, fuelwood, or other products.

Total pulpwood production in the five states for 1947 was 4.8 million cords, an increase of 2.6 percent over 1946 and 11.5 percent over 1945. The state of South Carolina shows a decrease of 7 percent in total production, but production in all other states increased. The use of hardwoods decreased slightly in 1947, but the reported use is still well above the 1945 level.

Table 1. - Pulpwood production in the Southeast by state and survey unit, 1947

State	Forest survey unit	Species group			Total
		Softwoods	Hardwoods	Chestnut[1]	
	Number	Std.cords	Std.cords	Std.cords	Std.cords
Virginia	[2] 1	415,024	41,010	-	456,034
	2	225,074	51,355	4,281	280,710
	3	100,564	51,867	14,432	166,863
	4	29,745	43,863	5,785	79,393
	5	5,903	8,781	27,721	42,405
	All units	776,310	196,876	52,219	1,025,405
North Carolina	1	216,551	9,791	-	226,342
	2	138,795	9,512	-	148,307
	3	85,135	8,252	64	93,451
	4	91,314	29,719	176,059	297,092
	All units	531,795	57,274	176,123	765,192
South Carolina[3]	1	261,142	24,129	-	285,271
	2	317,419	42,346	-	359,765
	3	284,080	19,272	-	303,352
	All units	862,641	85,747	-	948,388
Georgia	1	528,364	46,238	-	574,602
	2	202,398	6,194	-	208,592
	3	266,061	8,205	-	274,266
	4	109,683	1,452	-	111,135
	5	13,540	3,483	29,586	46,609
	All units	1,120,046	65,572	29,586	1,215,204
Florida	1	521,972	610	-	522,582
	2	246,323	632	-	246,955
	3	111,879	-	-	111,879
	4	295	-	-	295
	All units	880,469	1,242	-	881,711
All states	Total	4,171,261	406,711	257,928	4,835,900

[1] Includes only chestnut used for pulp; an additional volume was used by plants making only tanning extract.

[2] For location of survey units, see Figure 1.

[3] For comparison, the 1946 production in South Carolina by original survey units was as follows: Unit 1 - Softwoods 287,942 cords, hardwoods 36,957 cords; Unit 2 - Softwoods 323,188 cords, hardwoods 50,989 cords; Unit 3 - Softwoods 298,109 cords, hardwoods 24,606 cords.

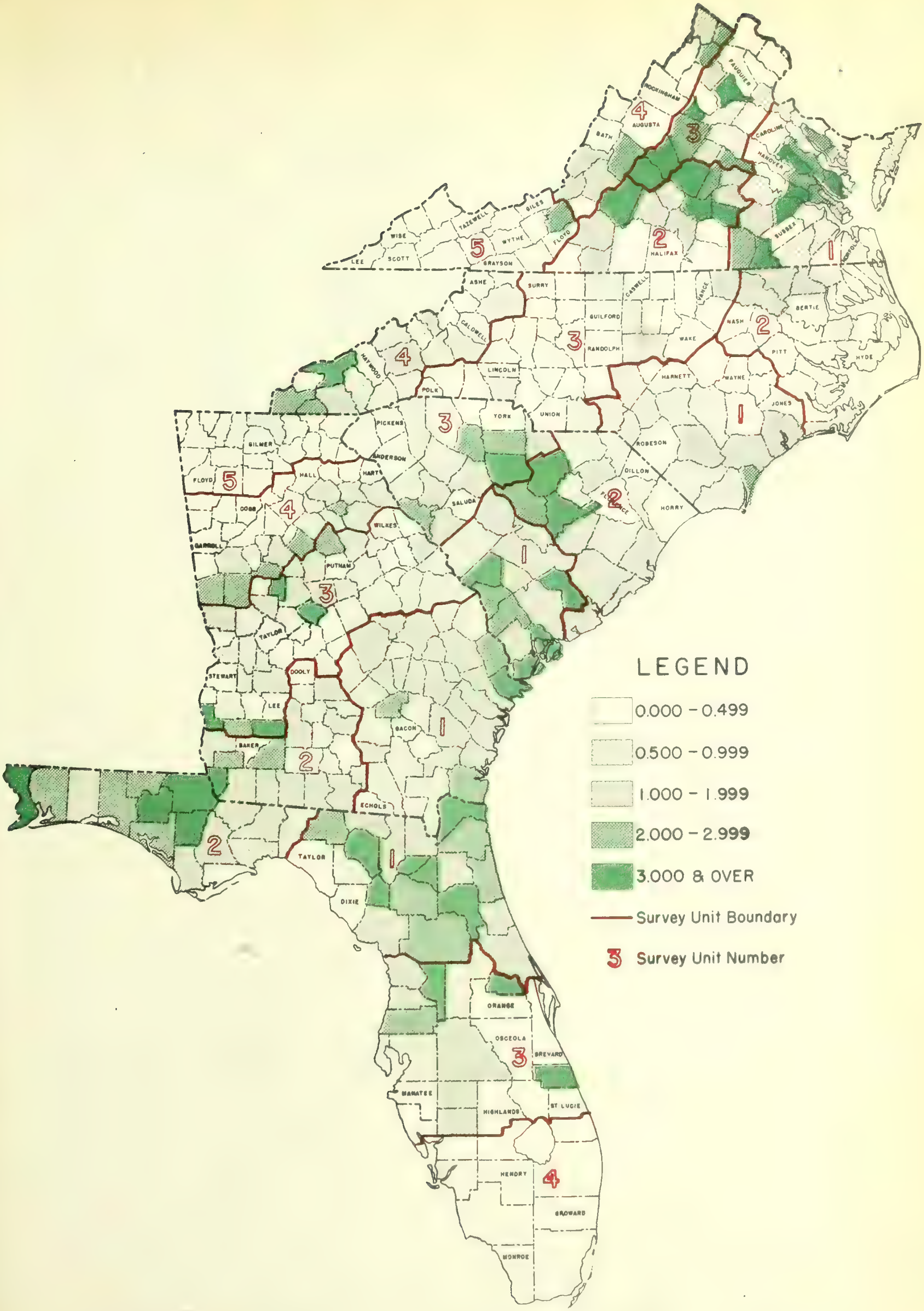

Figure 1. - Intensity of pine pulpwood production in percent of pine growing stock.

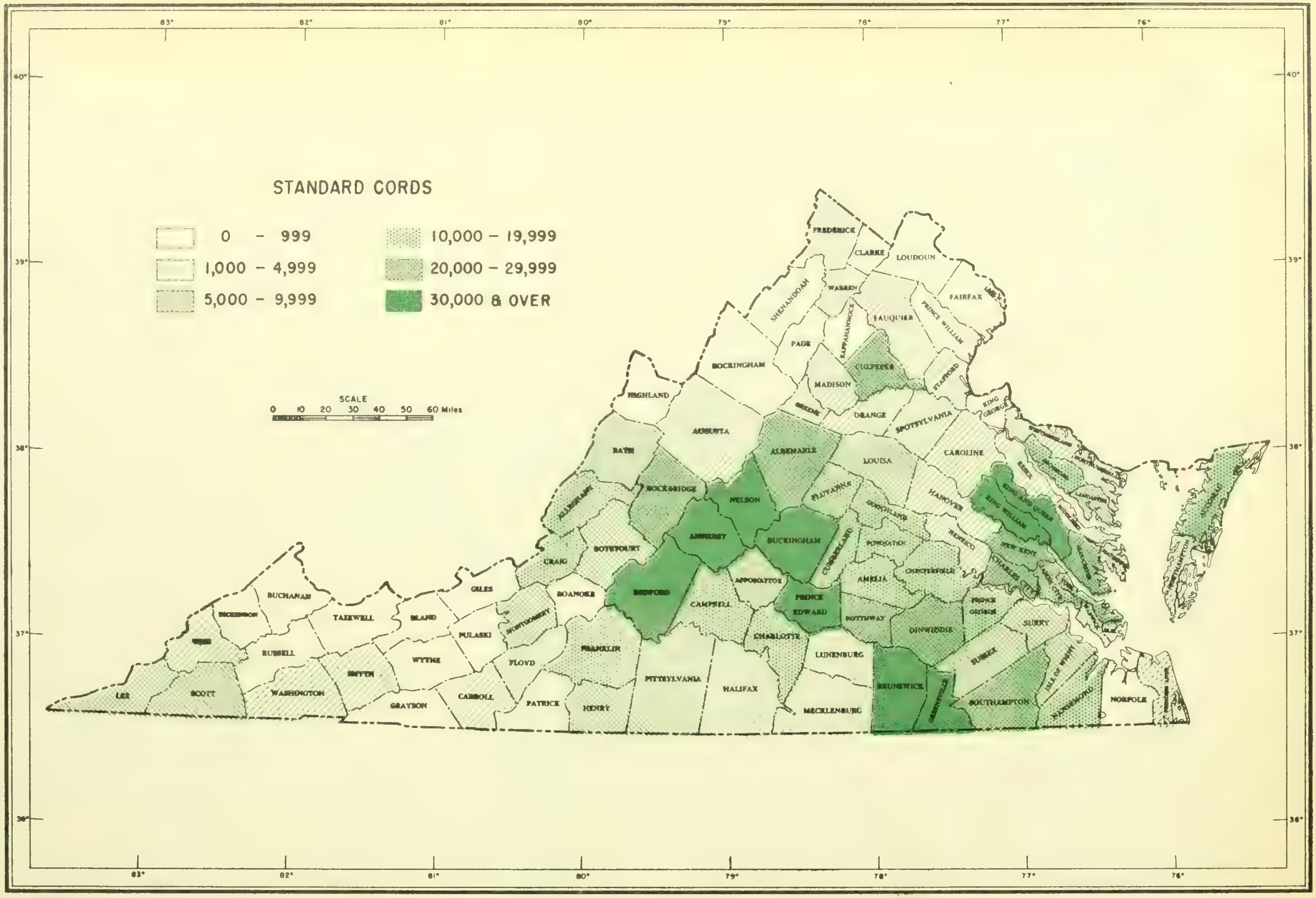

Figure 2. - Pulpwood production by county in Virginia, 1947.

Table 2. - Pulpwood production by county in Virginia, 1947

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Accomac	12,540	1,393	-	13,933
Albemarle	16,140	5,710	2,256	24,106
Alleghany	4,106	11,568	512	16,186
Amelia	16,759	2,265	-	19,024
Amherst	16,739	13,016	4,287	34,042
Appomattox	8,113	855	-	8,968
Arlington	-	-	-	-
Augusta	1,509	1,857	-	3,366
Bath	1,244	5,756	1,131	8,131
Bedford	21,407	4,843	4,200	30,450
Bland	-	-	-	-
Botetourt	4,441	4,570	-	9,011
Brunswick	63,515	3,045	-	66,560
Buchanan	-	-	219	219
Buckingham	52,620	24,301	-	76,921
Campbell	9,271	1,198	-	10,469
Caroline	317	896	-	1,213
Carroll	324	27	1,888	2,239
Charles City	20,351	828	-	21,179
Charlotte	8,934	1,599	-	10,533
Chesterfield	18,384	383	-	18,767
Clarke	666	42	-	708
Craig	4,102	6,874	3,819	14,795
Culpeper	13,934	7,633	150	21,717
Cumberland	15,024	2,052	-	17,076
Dickenson	-	-	481	481
Dinwiddie	23,698	637	-	24,335
Elizabeth City	-	-	-	-
Essex	2,531	281	-	2,812
Fairfax	107	33	-	140
Fauquier	922	201	-	1,123
Floyd	-	-	3,981	3,981
Fluvanna	11,438	6,199	-	17,637
Franklin	12,492	1,451	81	14,024
Frederick	2,759	236	-	2,995
Giles	-	-	94	94
Gloucester	25,308	2,812	-	28,120
Goochland	14,171	2,911	-	17,082
Grayson	-	-	531	531
Greene	1,185	51	-	1,236
Greensville	41,887	2,288	-	44,175
Halifax	1,961	17	-	1,978
Hanover	2,219	1,066	-	3,285
Henrico	1,553	130	-	1,683
Henry	8,651	51	-	8,702
Highland	78	527	35	640
Isle of Wight	7,929	1,968	-	9,897
James City	13,919	1,547	-	15,466
King and Queen	29,104	3,234	-	32,338
King George	718	38	-	756
King William	28,934	3,345	-	32,279

Table 2. - Virginia (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Lancaster	5,062	562	-	5,624
Lee	-	1,435	6,053	7,488
Loudoun	-	17	-	17
Louisa	7,367	2,269	-	9,636
Lunenburg	1,450	238	-	1,688
Madison	1,063	32	-	1,095
Mathews	1,265	141	-	1,406
Mecklenburg	1,324	-	-	1,324
Middlesex	2,531	281	-	2,812
Montgomery	4,965	1,928	2,644	9,537
Nansemond	3,523	6,556	-	10,079
Nelson	9,795	12,665	7,739	30,199
New Kent	20,509	4,055	-	24,564
Norfolk	678	-	-	678
Northampton	3,136	340	-	3,476
Northumberland	2,248	250	-	2,498
Nottoway	24,586	2,360	-	26,946
Orange	2,815	536	-	3,351
Page	192	14	-	206
Patrick	-	-	-	-
Pittsylvania	7,264	340	-	7,604
Powhatan	9,745	2,082	-	11,827
Prince Edward	25,473	7,703	-	33,176
Prince George	17,122	-	-	17,122
Prince William	467	-	-	467
Princess Anne	1,000	-	-	1,000
Pulaski	273	34	-	307
Rappahannock	595	48	-	643
Richmond	11,452	1,272	-	12,724
Roanoke	551	-	94	645
Rockbridge	8,208	12,145	194	20,547
Rockingham	110	49	-	159
Russell	-	-	-	-
Scott	-	1,112	6,899	8,011
Shenandoah	580	13	-	593
Smyth	102	1,220	1,538	2,860
Southampton	20,920	1,700	-	22,620
Spotsylvania	1,937	191	-	2,128
Stafford	1,889	355	-	2,244
Surry	9,335	113	-	9,448
Sussex	8,598	355	-	8,953
Tazewell	-	-	102	102
Warren	1,199	212	-	1,411
Warwick	2,750	228	-	2,978
Washington	-	3,025	1,300	4,325
Westmoreland	1,265	141	-	1,406
Wise	-	-	1,835	1,835
Wythe	239	-	156	395
York	10,723	1,125	-	11,848
All counties	776,310	196,876	52,219	1,025,405

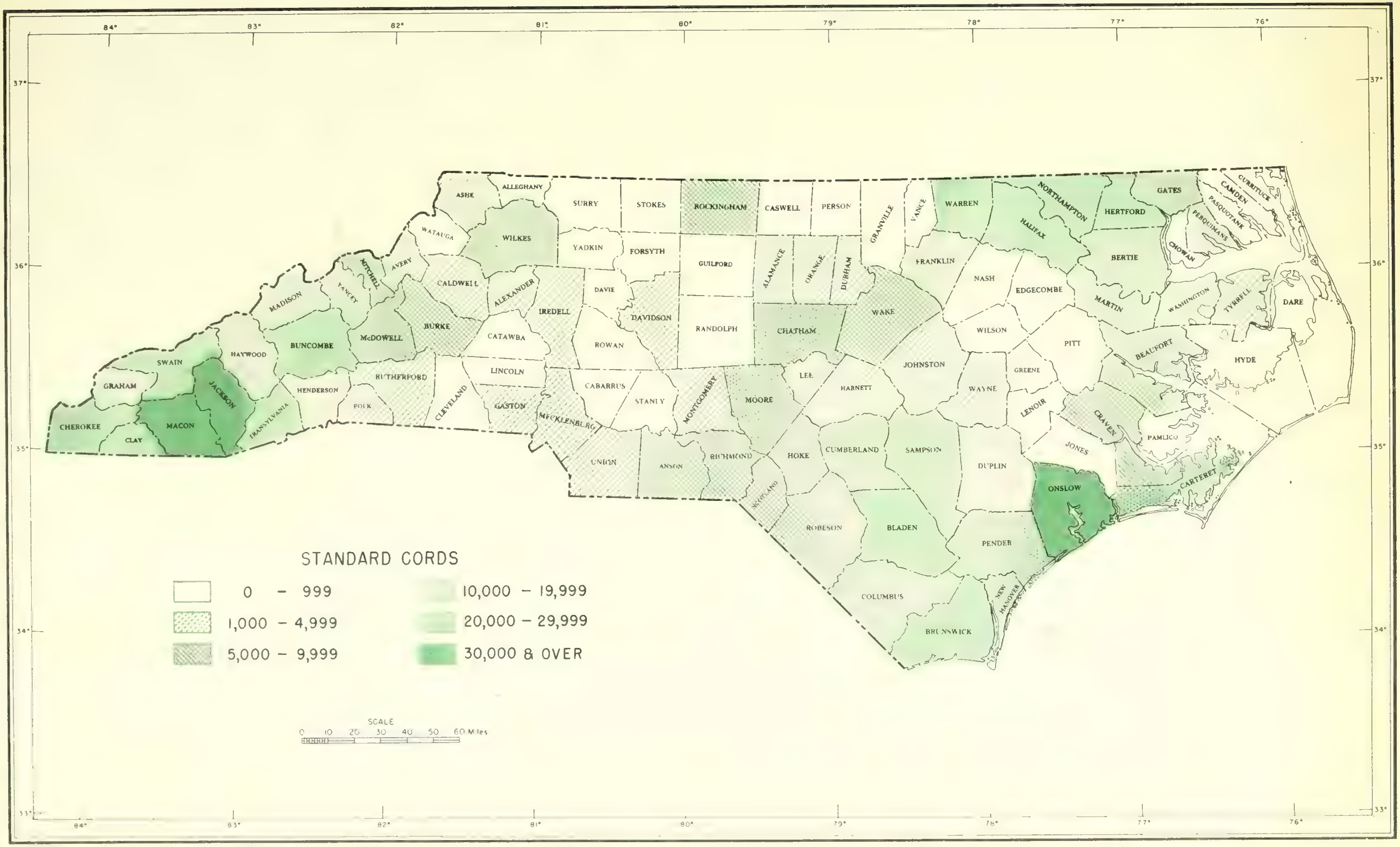

Figure 3. - Pulpwood production by county in North Carolina, 1947.

Table 3. - Pulpwood production by county in North Carolina, 1947

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Alamance	4,560	100	-	4,660
Alexander	1,344	27	-	1,371
Alleghany	-	-	194	194
Anson	7,305	1,139	-	8,444
Ashe	102	2,062	975	3,139
Avery	14	840	1,005	1,859
Beaufort	8,659	379	-	9,038
Bertie	11,075	1,490	-	12,565
Bladen	28,135	1,471	-	29,606
Brunswick	19,036	1,188	-	20,224
Buncombe	19,933	1,257	3,017	24,207
Burke	9,058	256	-	9,314
Cabarrus	-	-	-	-
Caldwell	588	329	84	1,001
Camden	-	-	-	-
Carteret	13,921	432	-	14,353
Caswell	-	-	-	-
Catawba	699	-	-	699
Chatham	14,277	829	-	15,106
Cherokee	16,215	2,273	3,876	22,364
Chowan	671	145	-	816
Clay	4,663	1,398	22,632	28,693
Cleveland	45	-	-	45
Columbus	14,834	334	-	15,168
Craven	5,888	-	-	5,888
Cumberland	9,843	413	-	10,256
Currituck	119	-	-	119
Dare	-	-	-	-
Davidson	850	669	-	1,519
Davie	122	14	-	136
Duplin	3,463	295	-	3,758
Durham	2,259	100	-	2,359
Edgecombe	188	-	-	188
Forsyth	-	146	-	146
Franklin	2,313	-	-	2,313
Gaston	3,891	-	-	3,891
Gates	12,962	1,507	-	14,469
Graham	1,826	726	4,664	7,216
Granville	483	-	-	483
Greene	-	-	-	-
Guilford	-	-	-	-
Halifax	21,116	2,000	-	23,116
Harnett	2,665	144	-	2,809
Haywood	252	961	4,621	5,834
Henderson	1,657	295	135	2,087
Hertford	25,312	95	-	25,407
Hoke	7,308	482	-	7,790
Hyde	780	-	-	780
Iredell	1,473	323	-	1,796
Jackson	1,646	2,675	40,305	44,626

Table 3. - North Carolina (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Johnston	1,973	-	-	1,973
Jones	92	-	-	92
Lee	3,056	118	-	3,174
Lenoir	644	-	-	644
Lincoln	21	-	-	21
McDowell	5,896	2,042	2,731	10,699
Macon	2,643	2,320	48,510	53,473
Madison	1,444	2,017	4,610	8,071
Martin	6,357	175	-	6,532
Mecklenberg	1,545	85	-	1,630
Mitchell	704	4,423	8,725	13,852
Montgomery	3,361	82	-	3,443
Moore	10,666	1,090	-	11,756
Nash	475	-	-	475
New Hanover	13,350	526	-	13,876
Northampton	23,005	2,612	-	25,617
Onslow	34,319	982	-	35,301
Orange	1,915	21	-	1,936
Pamlico	788	43	-	831
Pasquotank	71	-	-	71
Pender	17,903	1,273	-	19,176
Perquimans	2,021	46	-	2,067
Person	-	-	-	-
Pitt	14	-	-	14
Polk	1,202	414	28	1,644
Randolph	90	13	-	103
Richmond	8,951	537	-	9,488
Robeson	9,392	302	-	9,694
Rockingham	6,190	68	-	6,258
Rowan	73	-	-	73
Rutherford	2,201	492	36	2,729
Sampson	18,294	12	-	18,306
Scotland	8,390	624	-	9,014
Stanly	485	53	-	538
Stokes	119	11	-	130
Surry	455	-	-	455
Swain	6,990	2,643	11,096	20,729
Transylvania	5,361	543	14,683	20,587
Tyrrell	797	323	-	1,120
Union	1,284	782	-	2,066
Vance	124	-	-	124
Wake	8,255	798	-	9,053
Warren	18,194	2,086	-	20,280
Washington	4,306	255	-	4,561
Watauga	-	-	32	32
Wayne	4,237	-	-	4,237
Wilkes	12,297	1,233	240	13,770
Wilson	270	10	-	280
Yadkin	-	-	-	-
Yancey	25	1,426	3,924	5,375
All counties	531,795	57,274	176,123	765,192

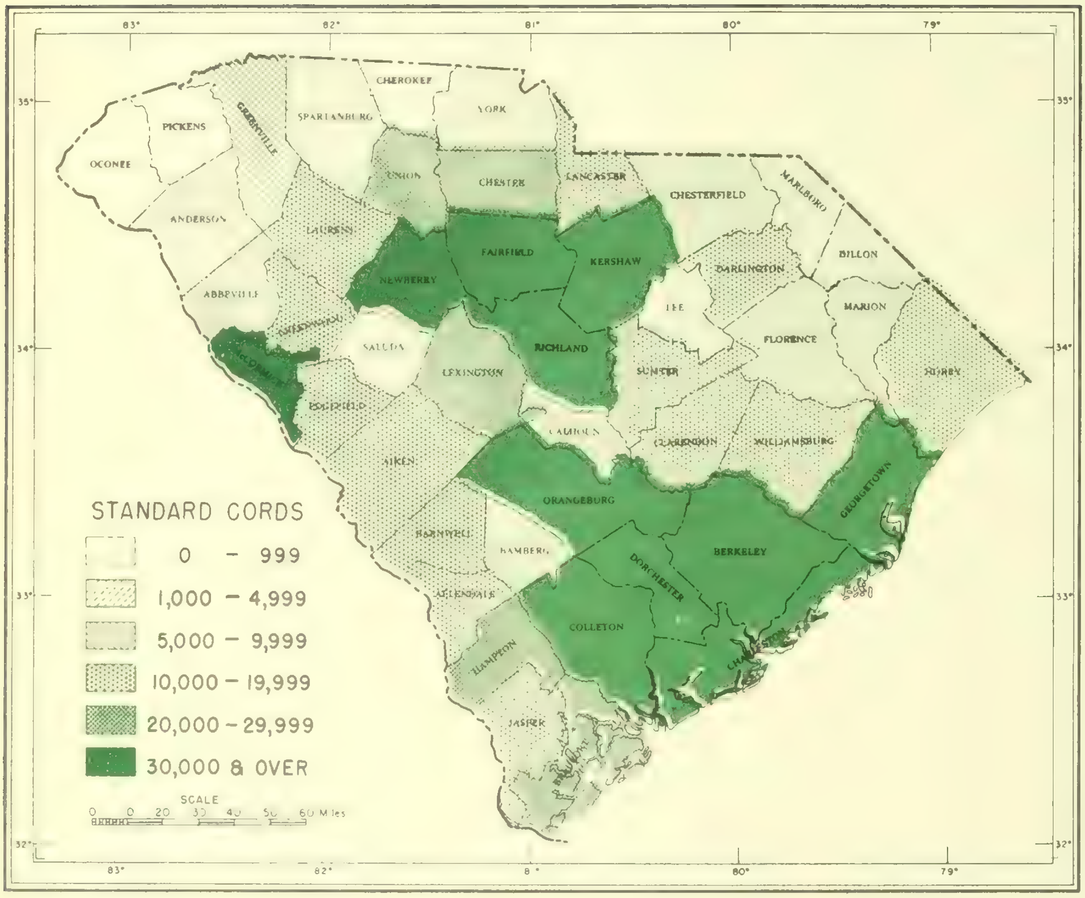

Figure 4. - Pulpwood production by county in South Carolina, 1947.

Table 4. - Pulpwood production by county in South Carolina, 1947

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Abbeville	5,228	39	-	5,267
Aiken	11,986	587	-	12,573
Allendale	10,840	1,100	-	11,940
Anderson	1,167	31	-	1,198
Bamberg	7,109	2,021	-	9,130
Barnwell	12,992	411	-	13,403
Beaufort	27,807	194	-	28,001
Berkeley	47,370	2,407	-	49,777
Calhoun	7,134	2,631	-	9,765
Charleston	34,491	1,833	-	36,324
Cherokee	621	-	-	621
Chester	22,252	1,606	-	23,858
Chesterfield	7,569	2,031	-	9,600
Clarendon	16,211	3,608	-	19,819
Colleton	38,394	1,671	-	40,065
Darlington	12,924	547	-	13,471
Dillon	1,836	673	-	2,509
Dorchester	64,273	1,469	-	65,742
Edgefield	17,748	953	-	18,701
Fairfield	83,248	10,722	-	93,970
Florence	3,386	2,090	-	5,476
Georgetown	45,461	4,220	-	49,681
Greenville	7,956	122	-	8,078
Greenwood	13,818	491	-	14,309
Hampton	23,513	1,800	-	25,313
Horry	13,992	1,597	-	15,589
Jasper	15,583	645	-	16,228
Kershaw	55,213	8,224	-	63,437
Lancaster	13,994	951	-	14,945
Laurens	15,026	370	-	15,396
Lee	3,585	1,272	-	4,857
Lexington	18,024	3,744	-	21,768
Marion	6,426	1,896	-	8,322
Marlboro	2,107	1,586	-	3,693
McCormick	36,750	180	-	36,930
Newberry	34,630	2,372	-	37,002
Oconee	358	31	-	389
Orangeburg	23,487	7,856	-	31,343
Pickens	276	98	-	374
Richland	37,654	6,987	-	44,641
Saluda	3,313	309	-	3,622
Spartanburg	2,473	47	-	2,520
Sumter	14,990	394	-	15,384
Union	23,032	640	-	23,672
Williamsburg	14,204	2,981	-	17,185
York	2,190	310	-	2,500
All counties	862,641	85,747	-	948,388

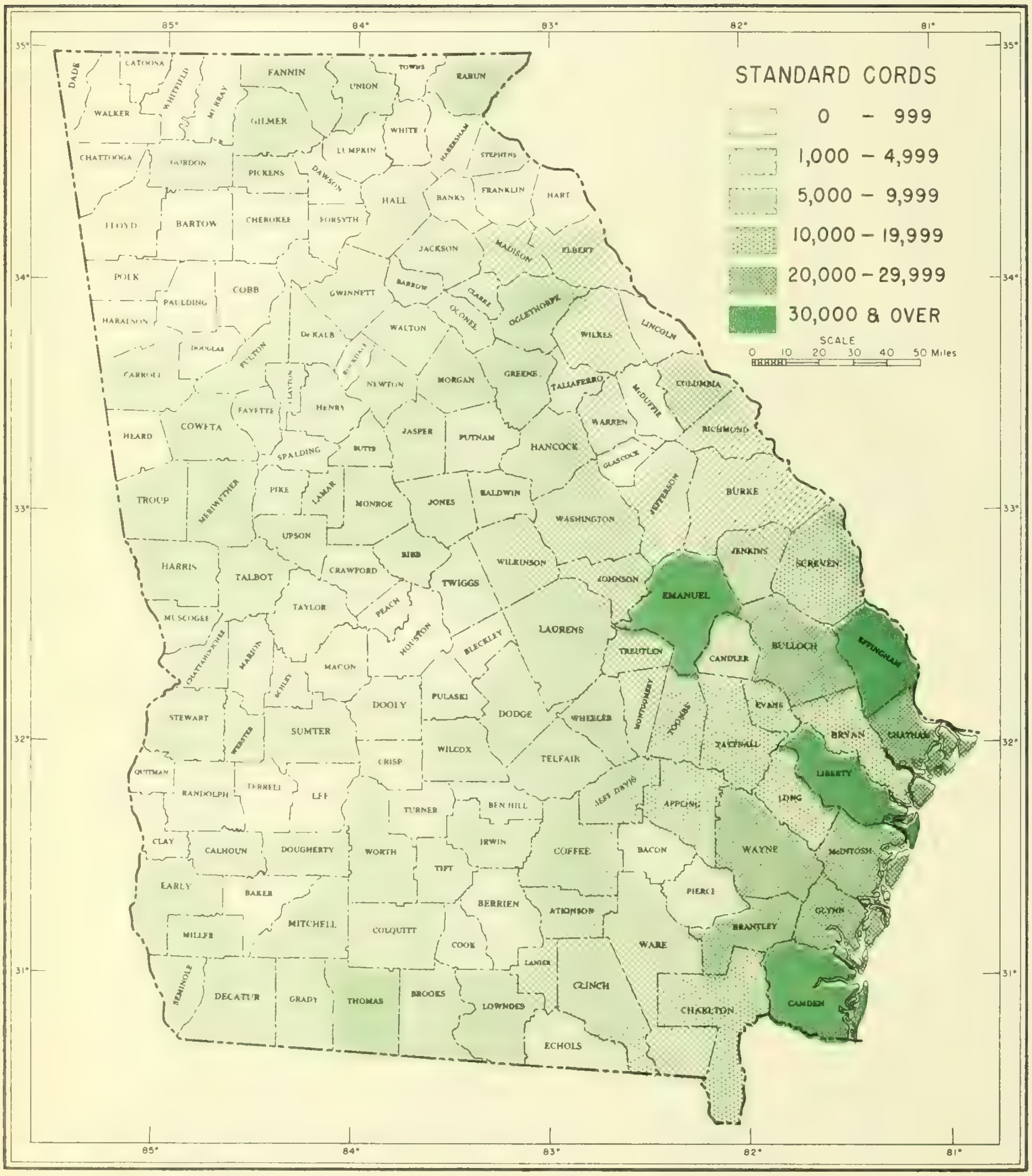

Figure 5. - Pulpwood production by county in Georgia, 1947.

Table 5. - Pulpwood production by county in Georgia, 1947

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Appling	9,464	1,427	-	10,891
Atkinson	12,304	385	-	12,689
Bacon	2,824	904	-	3,728
Baker	58	-	-	58
Baldwin	8,613	45	-	8,658
Banks	449	-	-	449
Barrow	1,815	49	-	1,864
Bartow	730	14	-	744
Ben Hill	2,830	316	-	3,146
Berrien	3,270	405	-	3,675
Bibb	11,310	892	-	12,202
Bleckley	836	20	-	856
Brantley	17,527	3,370	-	20,897
Brooks	14,486	45	-	14,531
Bryan	18,619	-	-	18,619
Bulloch	24,221	133	-	24,354
Burke	4,781	102	-	4,883
Butts	5,551	-	-	5,551
Calhoun	6,572	-	-	6,572
Camden	51,514	3,179	-	54,693
Candler	4,909	276	-	5,185
Carroll	1,623	18	-	1,641
Catoosa	-	29	-	29
Charlton	13,102	385	-	13,487
Chatham	19,645	6,448	-	26,093
Chattahoochee	5,482	158	-	5,640
Chattooga	292	-	-	292
Cherokee	243	-	-	243
Clarke	2,325	744	-	3,069
Clay	3,824	20	-	3,844
Clayton	1,212	-	-	1,212
Clinch	16,445	681	-	17,126
Cobb	294	-	-	294
Coffee	10,242	1,180	-	11,422
Colquitt	5,666	134	-	5,800
Columbia	7,406	32	-	7,438
Cook	4,378	385	-	4,763
Coweta	7,965	-	-	7,965
Crawford	2,363	65	-	2,428
Crisp	3,148	20	-	3,168
Dade	-	-	-	-
Dawson	-	-	-	-
Decatur	16,227	182	-	16,409
De Kalb	1,089	7	-	1,096
Dodge	7,067	884	-	7,951
Dooly	1,327	-	-	1,327
Dougherty	16,135	-	-	16,135
Douglas	573	26	-	599
Early	15,386	1,042	-	16,428
Echols	4,621	114	-	4,735
Effingham	37,811	1,468	-	39,279
Elbert	3,990	73	-	4,063
Emanuel	32,305	771	-	33,076

Table 5. - Georgia (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Evans	10,096	962	-	11,058
Fannin	4,205	1,390	11,250	16,845
Fayette	2,194	-	-	2,194
Floyd	929	15	-	944
Forsyth	-	-	-	-
Franklin	705	-	-	705
Fulton	1,932	-	-	1,932
Gilmer	477	860	5,625	6,962
Glascock	-	-	-	-
Glynn	17,191	3,247	-	20,438
Gordon	991	34	-	1,025
Grady	17,493	45	-	17,538
Greene	11,270	145	-	11,415
Gwinnett	2,782	60	-	2,842
Habersham	525	179	17	721
Hall	2,780	16	-	2,796
Hancock	5,298	226	-	5,524
Haralson	628	38	-	666
Harris	15,926	612	-	16,538
Hart	25	-	-	25
Heard	-	-	-	-
Henry	4,303	-	-	4,303
Houston	374	45	-	419
Irwin	7,242	726	-	7,968
Jackson	3,705	-	-	3,705
Jasper	11,943	-	-	11,943
Jeff Davis	16,565	89	-	16,654
Jefferson	3,586	548	-	4,134
Jenkins	4,677	956	-	5,633
Johnson	5,085	454	-	5,539
Jones	13,208	45	-	13,253
Lamar	10,414	20	-	10,434
Lanier	7,103	588	-	7,691
Laurens	16,242	244	-	16,486
Lee	796	-	-	796
Liberty	30,296	1,311	-	31,607
Lincoln	-	-	-	-
Long	15,117	648	-	15,765
Lowndes	15,205	182	-	15,387
Lumpkin	-	-	-	-
McDuffie	806	99	-	905
McIntosh	24,131	1,602	-	25,733
Macon	2,204	-	-	2,204
Madison	4,147	87	-	4,234
Marion	1,519	114	-	1,633
Meriwether	16,963	-	-	16,963
Miller	12,919	430	-	13,349
Mitchell	15,987	45	-	16,032
Monroe	16,092	65	-	16,157
Montgomery	4,718	2,681	-	7,399
Morgan	19,375	176	-	19,551
Murray	-	-	-	-
Muscogee	2,585	430	-	3,015
Newton	9,719	25	-	9,744

Table 5. - Georgia (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Oconee	1,846	12	-	1,858
Oglethorpe	12,512	254	-	12,766
Paulding	-	-	-	-
Peach	36	20	-	56
Pickens	1,569	32	-	1,601
Pierce	3,086	839	-	3,925
Pike	2,650	45	-	2,695
Polk	357	-	-	357
Pulaski	1,834	-	-	1,834
Putnam	3,775	65	-	3,840
Quitman	735	65	-	800
Rabun	1,339	268	7,069	8,676
Randolph	2,918	340	-	3,258
Richmond	2,046	116	-	2,162
Rockdale	584	-	-	584
Schley	2,357	-	-	2,357
Screven	13,308	705	-	14,013
Seminole	8,584	-	-	8,584
Spalding	3,792	-	-	3,792
Stephens	1,455	32	-	1,487
Stewart	5,283	89	-	5,372
Sumter	6,200	20	-	6,220
Talbot	8,495	3,065	-	11,560
Taliaferro	2,920	151	-	3,071
Tattnall	15,359	167	-	15,526
Taylor	1,142	45	-	1,187
Telfair	6,390	3,040	-	9,430
Terrell	441	-	-	441
Thomas	22,184	474	-	22,658
Tift	4,029	1,155	-	5,184
Toombs	14,070	760	-	14,830
Towns	-	-	-	
Treutlen	7,431	1,787	-	9,218
Troup	14,951	-	-	14,951
Turner	3,646	-	-	3,646
Twiggs	1,474	37	-	1,511
Union	13	-	5,625	5,638
Upson	10,662	89	-	10,751
Walker	250	630	-	880
Walton	4,423	43	-	4,466
Ware	9,161	725	-	9,886
Warren	1,327	-	-	1,327
Washington	9,644	65	-	9,709
Wayne	21,022	3,154	-	24,176
Webster	5,297	-	-	5,297
Wheeler	11,799	1,262	-	13,061
White	-	-	-	-
Whitfield	522	-	-	522
Wilcox	7,648	20	-	7,668
Wilkes	2,600	-	-	2,600
Wilkinson	5,956	134	-	6,090
Worth	13,582	-	-	13,582
All counties	1,120,046	65,572	29,586	1,215,204

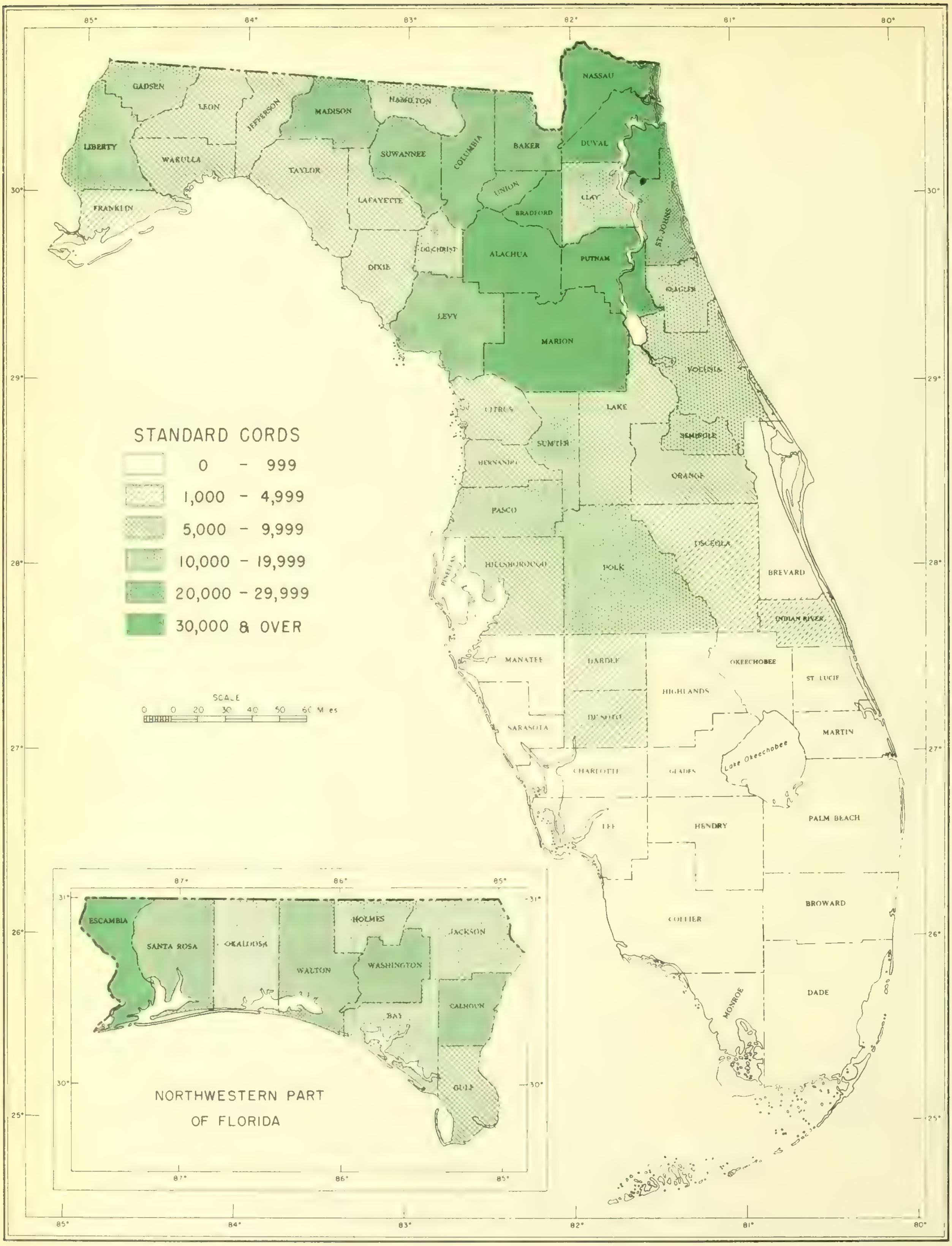

Figure 6. - Pulpwood production by county in Florida, 1947.

Table 6. - Pulpwood production by county in Florida, 1947

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Alachua	40,595	15	-	40,610
Baker	21,486	-	-	21,486
Bay	13,088	-	-	13,088
Bradford	37,453	15	-	37,468
Brevard	89	-	-	89
Broward	-	-	-	-
Calhoun	21,482	-	-	21,482
Charlotte	30	-	-	30
Citrus	7,686	-	-	7,686
Clay	16,132	-	-	16,132
Collier	-	-	-	-
Columbia	21,675	136	-	21,811
Dade	-	-	-	-
De Soto	1,508	-	-	1,508
Dixie	7,105	-	-	7,105
Duval	35,833	-	-	35,833
Escambia	34,236	-	-	34,236
Flagler	12,097	-	-	12,097
Franklin	2,029	-	-	2,029
Gadsden	12,083	89	-	12,172
Gilchrist	13,643	-	-	13,643
Glades	-	-	-	-
Gulf	6,965	-	-	6,965
Hamilton	13,821	247	-	14,068
Hardee	4,142	-	-	4,142
Hendry	-	-	-	-
Hernando	8,523	-	-	8,523
Highlands	60	-	-	60
Hillsborough	5,625	-	-	5,625
Holmes	13,823	-	-	13,823
Indian River	3,966	-	-	3,966
Jackson	19,283	-	-	19,283
Jefferson	5,712	227	-	5,939
Lafayette	5,839	-	-	5,839
Lake	8,815	-	-	8,815
Lee	190	-	-	190
Leon	9,259	134	-	9,393
Levy	27,265	-	-	27,265
Liberty	16,059	-	-	16,059
Madison	27,799	-	-	27,799
Manatee	256	-	-	256
Marion	50,119	-	-	50,119
Martin	-	-	-	-
Monroe	75	-	-	75
Nassau	57,455	63	-	57,518
Okaloosa	15,824	-	-	15,824
Okeechobee	-	-	-	-
Orange	5,150	-	-	5,150
Osceola	4,191	-	-	4,191

Table 6. - Florida (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Palm Beach	-	-	-	-
Pasco	17,126	-	-	17,126
Pinellas	768	-	-	768
Polk	18,902	-	-	18,902
Putnam	30,931	-	-	30,931
Saint Johns	25,438	-	-	25,438
Saint Lucie	-	-	-	-
Santa Rosa	24,164	-	-	24,164
Sarasota	119	-	-	119
Seminole	12,060	-	-	12,060
Sumter	12,893	-	-	12,893
Suwannee	26,863	134	-	26,997
Taylor	8,685	-	-	8,685
Union	23,347	-	-	23,347
Volusia	18,391	-	-	18,391
Wakulla	5,868	182	-	6,050
Walton	20,355	-	-	20,355
Washington	26,093	-	-	26,093
All counties	880,469	1,242	-	881,711

FOREST SURVEY REPORTS PUBLISHED BY SOUTHEASTERN FOREST EXPERIMENT STATION

Forest Survey Releases

No. 1 - Forest Resources of the Northern Coastal Plain of South Carolina. 1939

No. 2 - Forest Resources of the Piedmont Region of South Carolina. 1939

No. 3 - Forest Resources of the Southern Coastal Plain of South Carolina. 1939

No. 4 - Forest Resources of the Southern Coastal Plain of North Carolina. 1940

No. 5 - Forest Resources of the Northern Coastal Plain of North Carolina. 1940

No. 6 - Forest Resources of the Piedmont Region of North Carolina. 1940

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USDA Miscellaneous Publications

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No.552 - South Carolina Forest Resources and Industries. 1944

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FOREST SURVEY RELEASE NO. 28 APRIL 15, 1949

SOUTH CAROLINA'S FOREST RESOURCES, 1947

by

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SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA

I. T. HAIG, Director

In cooperation with
SOUTH CAROLINA STATE COMMISSION OF FORESTRY
COLUMBIA, SOUTH CAROLINA
C. H. Flory, State Forester

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern States the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

South Carolina was inventoried by the Forest Survey in the period 1934-36 and reports presenting the findings have been published. Since then better forest management, more intensive forest use, changes in land use, and other factors have caused changes in the forest growing stock that can only be measured accurately by on-the-ground surveys. This statistical report presents the results of a resurvey made between November 1946 and March 1947. Later an analytical report will be published which will interpret these statistics in the light of existing and anticipated economic conditions and focus attention upon the principal forest problems and possible solutions.

ACKNOWLEDGMENTS

The authors gratefully acknowledge the assistance received from the South Carolina State Commission of Forestry; the U. S. Department of Commerce, Bureau of the Census; the Extension Forester and his staff, Clemson Agricultural College; and the management of pulpmills and other wood-using plants, in the collection of basic field data.

Field work on the timber inventory phase was under the supervision of M. B. Bryan and was done by the following men: F. A. Bennett, R. W. Cooper, N. F. Force, J. H. Davidson, D. W. Warner, H. R. Scott, and J. J. Zirkle.

Statistical and machine tabulation procedures for obtaining and summarizing the field inventory data were developed by Arthur S. Todd, Jr. The computations were made under the direction of Miss Agnes Creasman, assisted by Mrs. Christine Paxton and Miss Priscilla Walker.

CONTENTS

Page

1947 FACTS AND SIGNIFICANT CHANGES - 1

Forest area increases - 1

Hardwood type area increases - 1

Saw timber on 43 percent of forest land - - - - - - - - - - - - - - 2

Increase in number of hardwood saplings - - - - - - - - - - - - - - 2

Greater volume of pole trees - 2

Saw-timber volume decreases - 3

Total sound-tree volume decreases - - - - - - - - - - - - - - - - - 3

More volume in cull trees - 4

Higher proportion of net growth in hardwood - - - - - - - - - - - 4

Forest drain at high level - 4

DETAILED FOREST STATISTICS - 6

State tables - 6- 27

Unit 1, Southern Coastal Plain, tables - - - - - - - - - - - - - - 28- 49

Unit 2, Northern Coastal Plain, tables - - - - - - - - - - - - - - 50- 71

Unit 3, Piedmont, tables - 72- 93

County tables - 94-100

Standard Forest Survey tables - - - - - - - - - - - - - - - - - - - 101-113

HOW THE FOREST INVENTORY IS MADE - 114-115

DEFINITION OF TERMS - 116-120

RELIABILITY OF THE DATA - 121-122

TABLES FOR THE STATE AND SURVEY UNITS

Table No.	State	Unit 1	Unit 2	Unit 3
AREA				
1. Gross area by broad use class, 1947	6	28	50	72
2. Ownership of land, 1947	7	29	51	73
3. Ownership of all private properties of 1,000 acres or more, 1946	8	30	52	74
4. Commercial forest area by forest type and stand size, 1947	9	31	53	75
NET VOLUME OF SAW TIMBER, 1947				
5. By species and stand size	10	32	54	76
6. By species and diameter class	11	33	55	77
7. By forest type and stand size	12	34	56	78
NET VOLUME OF ALL TREES, 1947				
8. By species and stand size	13	35	57	79
9. By species and diameter class	14	36	58	80
10. By species and class of material	15	37	59	81
11. By forest type and stand size	16	38	60	82
AVERAGE VOLUME PER ACRE, 1947				
12. Of saw timber by type and stand size	17	39	61	83
13. Of all trees by type and stand size	18	40	62	84
14. Of pole-timber trees by type and stand size.	19	41	63	85
ANNUAL GROWTH, 1947				
15. Of saw timber by stand size and species group	20	42	64	86
16. Of timber by stand size and species group	21	43	65	87
17. Of saw timber, per acre, by forest type and stand size	22	44	66	88
18. Of timber, per acre, by forest type and stand size	23	45	67	89
COMMODITY DRAIN, 1946				
19. From saw timber by commodity and species group	24	46	68	90
20. From timber by commodity and species group	25	47	69	91
NET CHANGE, 1946				
21. In saw timber by species group	26	48	70	92
22. In all timber by species group	27	49	71	93

TABLES FOR COUNTIES

Table No. Page

23. Land area by county and broad use class, 1947 94

24. Ownership of all commercial forest land by county, 1947 95

25. Net volume of all trees by county, preferred pulping species, and tree diameter group, 1947 96

26. Net volume of saw timber by county and species group, 1947 97

27. Net volume of saw timber by county, broad species group, and diameter-class group, 1947 98

28. Total commodity drain by county and species group, 1947 100

STANDARD FOREST SURVEY TABLES - SOUTH CAROLINA

29. Area of forest and non-forest land, 1947 102

30. Area of commercial forest land by stand size and ownership, 1947 103

31. Area of saw-timber stands on commercial forest land by broad forest type and character of growth, 1947 104

32. Board-foot volume of saw-timber trees on commercial forest land by stand size and species, 1947 105

33. Board-foot volume of saw-timber trees on commercial forest land by species group and ownership, 1947 106

34. Cubic-foot volume of saw-timber and pole timber trees on commercial forest land by stand size and species, 1947 107

35. Cubic-foot volume of saw-timber and pole timber trees on commercial forest land by species group, tree size, and kind of material, 1947 108

36. Cubic-foot volume of commodity drain from growing stock on commercial forest land by tree size, species group, and commodity, 1946 109

37. Board-foot volume of commodity drain from saw-timber growing stock on commercial forest land by commodity and species group, 1946 110

38. Volume of growing stock killed by fire and natural causes on commercial forest land by species group and tree size, 1946 111

39. Current annual net growth on commercial forest land by species group and tree size, 1946 112

40. Change in growing stock volume during 1946 by species group 113

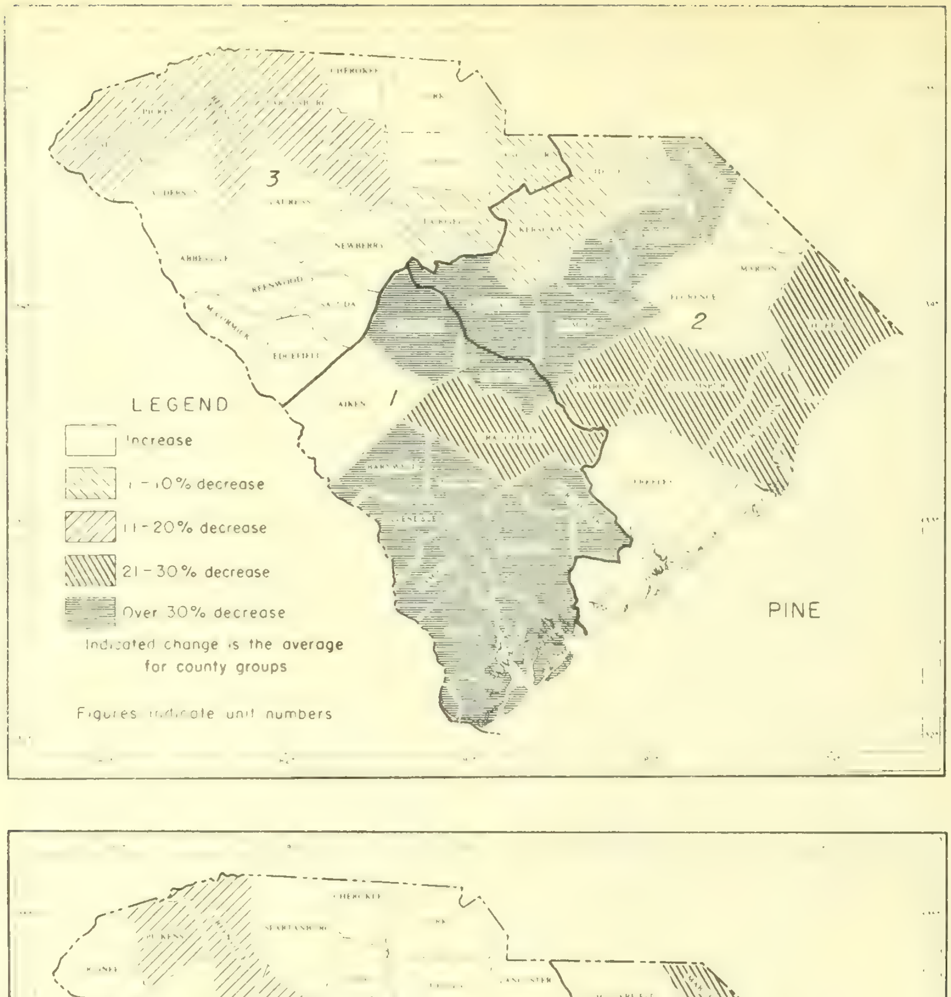

Figure 1. - Change in volume of sound timber 5.0 inches d.b.h. and larger, 1936 to 1947

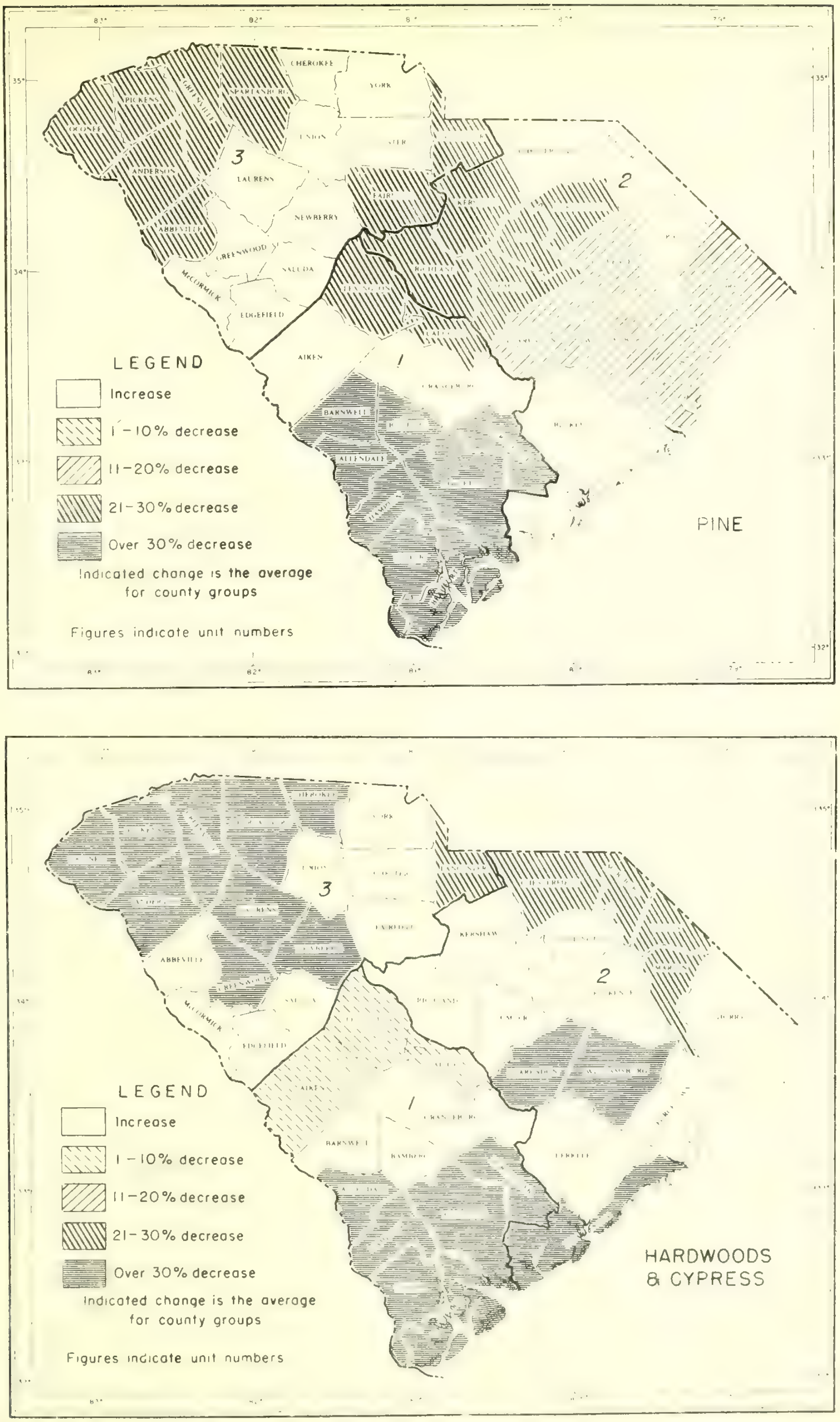

Figure 2. - Change in volume of saw timber, 1[illegible] to 1947

SOUTH CAROLINA'S FOREST RESOURCES, 1947

This report presents the findings of a resurvey of South Carolina's timber resources. This survey, made between November 1946 and March 1948, is the second which has been made of the state by the Forest Survey. It is designed to provide up-to-date facts on forest area, timber volume, growth, and timber drain needed in planning for better development and use of the timber resource. In addition, by comparison with the original inventory, which was completed in 1936, trends in the timber supply can be evaluated.

1947 FACTS AND SIGNIFICANT CHANGES

Forest area increases: In 1947 the area of commercial forest land was 11.9 million acres, a 11.2-percent increase over the 10.7 million acres prevailing in 1936. The greatest increase occurred in the Piedmont where a large amount of agricultural land has reverted to forest.

Table A. - Area of commercial forest land

Survey Unit	1947	1936	Increase since 1936	
	Acres	Acres	Acres	Percent
1. Southern Coastal Plain	3,026,300	2,993,000	33,300	1.1
2. Northern Coastal Plain	4,854,500	4,498,400	356,100	7.9
3. Piedmont	4,018,700	3,187,200	831,500	26.1
Total	11,899,500	10,678,600	1,220,900	11.2

Hardwood type area increases: Hardwood types occupy 39 percent of the forest area in contrast to only 27 percent in 1936. The 1.7 million-acre increase is distributed throughout the state and is due, in part, to conversion of pine-hardwood stands to hardwood by heavy cutting of the pine. Hardwoods have also restocked abandoned fields in many instances. There was no significant change in the total area of the loblolly and shortleaf types, but loblolly now occupies over 40 percent more forest land in the Piedmont than in 1936. Conversion of longleaf stands to scrub oak, chiefly on the Sand Ridge, caused nearly a 40-percent reduction in the longleaf area.

Table B. - Area of forest types

Forest type	1947	1936	Change since 1936	
	Million acres	Million acres	Million acres	Percent
Loblolly pine	4.1	4.0	+ 0.1	+ 2.5
Shortleaf pine	2.1	2.0	+ 0.1	+ 5.0
Longleaf pine	1.1	1.8	- 0.7	- 38.9
Lowland hdwds.	3.2	2.2	+ 1.0	+ 45.4
Upland hdwds.	1.4	0.7	+ 0.7	+100.0

Saw timber on 43 percent of forest land: No direct comparison of forest area by stand class is possible, as different standards were used on the resurvey (see definition of terms, page 116). In 1947 saw-timber stands, containing more than 1,500 board feet per acre, occupied 43 percent of the forest land, 26 percent was stocked with pole-size timber, 24 percent with seedlings and saplings, and 7 percent was stocked very thinly with trees of various sizes. Hardwood stands of pole, seedling, and sapling size occupied 20 percent of the forest land in the state.

Increase in number of hardwood saplings: Since the original survey in 1936, there has been a marked increase in the number of 1.0- to 4.9-inch hardwood trees per average acre, ranging from 7 percent in the Piedmont to 60 percent in the Northern Coastal Plain. In contrast, the number of pines remained practically the same in two survey units and increased less than the hardwoods in the third. As a result, young hardwoods now make up a larger part of the sapling stand in all three survey units.

Table C. - Change in number of saplings per average acre, 1936 to 1947

Survey Unit	Softwoods	Hardwoods
	Percent	Percent
1. Southern Coastal Plain	0	+ 14
2. Northern Coastal Plain	+ 10	+ 60
3. Piedmont	- 1	+ 7

Greater volume of pole trees: There was an over-all increase of 15 percent in the volume of pole trees. Cypress showed the greatest gain but because of the small volumes involved, the indicated changes may be relatively insignificant. Hardwoods decreased only in the Southern Coastal Plain. Pines were overcut in the Coastal Plain but increased enough in the Piedmont to more than balance the loss.

Table D. - Percent change in volume of pole trees, 1936 to 1947[1]

Survey Unit	Pine	Cypress	Hardwoods	All species
1. Southern Coastal Plain	- 27	+ 18	- 10	- 14
2. Northern Coastal Plain	- 5	+ 80	+ 19	+ 14
3. Piedmont	+ 45	--	+ 57	+ 50
State	+ 11	+ 47	+ 17	+ 15

1/ Comparison of volumes in pine and cypress trees 5.0 to 8.9 inches d.b.h., hardwoods 5.0 to 12.9 inches.

Saw-timber volume decreases: The total volume of saw timber in 1947 was estimated to be 29.5 billion board feet, including 2.3 billion feet in 12-inch hardwoods, which were not considered saw timber on the first survey. Omitting those hardwoods, the volume was 27.2 billion feet, 10 percent less than in 1936. Most of the hardwood decrease was in sweetgum, but all of the pines, except the pond, spruce, and white pines, decreased by substantial amounts.

Overcutting was particularly severe in the Southern Coastal Plain, where there was an indicated decrease of 24 percent in total board-foot volume. In the Northern Coastal Plain the trend pointed toward a small reduction, while in the Piedmont the change was too small to be particularly significant.

Table E. - Percent change in saw-timber volume, 1936 to 1947

Survey Unit	Pine	Cypress	Hardwoods[1]	All species
1. Southern Coastal Plain	- 29	- 14	- 16	- 24
2. Northern Coastal Plain	- 6	- 3	- 2	- 4
3. Piedmont	- 2	--	- 3	- 2
State	- 12	- 7	- 6	- 10

1/ Comparison of volumes in trees 13.0 inches d.b.h. and larger.

Total sound-tree volume decreases: Chiefly because of the general reduction in saw-timber volume, the total volume in all sound trees 5.0 inches d.b.h. and larger was 5 percent less in 1947 than in 1936. There were gains in both pines and hardwoods in the Piedmont, but volume reductions were the rule throughout the Coastal Plain.

Table F. - Percent change in total sound-tree volume, 1936 to 1947

Survey Unit	Pine	Cypress	Hardwoods	All species
1. Southern Coastal Plain	- 31	- 16	- 18	- 24
2. Northern Coastal Plain	- 4	+ 2	negl.	- 2
3. Piedmont	+ 11	--	+ 19	+ 14
State	- 8	- 5	- 2	- 5

More volume in cull trees: The total amount of sound wood in cull trees has increased from 1.2 billion cubic feet to 1.9 billion, an increase of nearly 60 percent. Most of this volume is in the hardwoods. Cull tree volume is now 18 percent of the total volume in the state, compared to only 11 percent in 1936.

Higher proportion of net growth in hardwood: Although there was less saw timber in 1947, the net annual growth in board feet was only three percent less than in 1936. This can be explained by the currently higher growth rates due to (1) a higher proportion of smaller, fast-growing trees, and (2) lower mortality rates. In 1936 total growth in board feet was 1,380 million board feet compared to 1,341 million feet in 1946 (an additional 116 million feet of growth occurred on 12-inch trees called saw timber on the resurvey). The fairly heavy decline in the softwood growing stock has been paralleled by a reduction in net growth, and softwoods now account for only 69 percent of the net board-foot growth compared to 73 percent in 1936.

In 1946 the net growth on all sound trees 5.0 inches d.b.h. and larger was 5.6 million cords, 65 percent softwoods and 35 percent hardwoods. Net growth of pole timber was only 14 percent of the total, as the volume of pole trees recruiting into saw timber greatly exceeded the volume of saplings growing into pole sizes.

Forest drain at high level: From 1936 through 1946 about 16 billion board feet of timber have been cut from South Carolina's forests, an annual average of 1,473 million feet. The 1946 drain was 1,520 million board feet. The drain of all sound trees 5.0 inches d.b.h. and larger has totaled 53 million cords over the period, an annual average of 4.8 million cords. In 1946 the drain was 5.0 million cords. Hardwoods have provided about 26 percent of the board-foot drain and 29 percent of the drain in cords since 1936. Significant features of the drain pattern are as follows: (1) Pulpwood drain has increased from 394,000 cords in 1936 to 980,000 in 1946. (2) In 1936 over 60 percent of the hardwood lumber was cut from sweetgum; in 1946 only 25 percent; production of lumber from oak, yellow-poplar, and the black gums has increased. (3) Much less good-quality pine is cut for fuelwood; greater use is being made of sawmill waste, cull trees, and small, low-quality hardwoods. (4) The 1946 drain on all sound hardwoods 5.0 inches d.b.h. and larger was over five percent of the growing stock in 11 counties; softwood drain was over five percent in 21 counties (fig. 3).

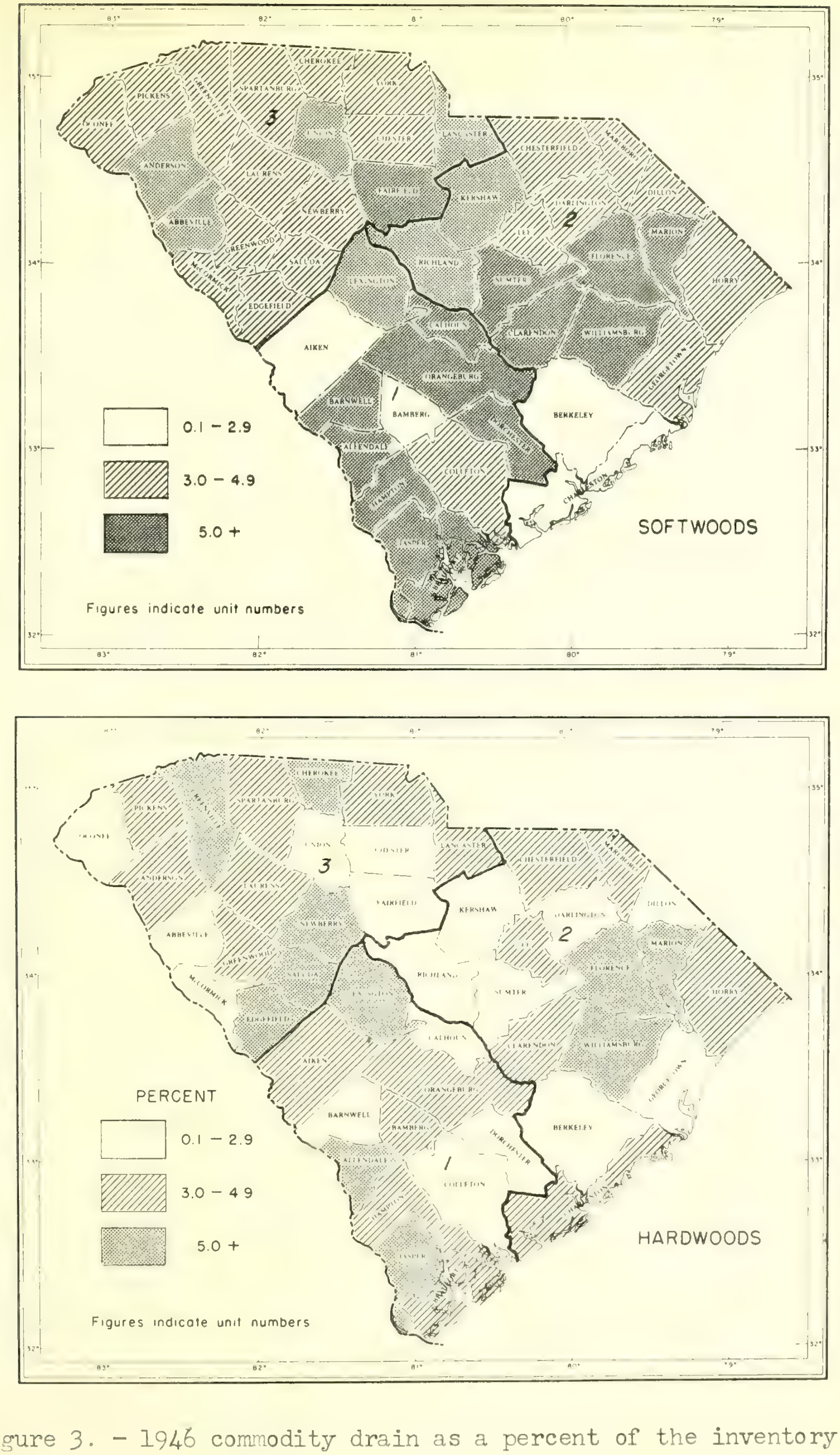

Figure 3. - 1946 commodity drain as a percent of the inventory of sound trees 5.0 inches d.b.h. and larger

Table 1. - Gross area[1] of South Carolina by broad use class, 1947

Class of use	Area	
	Acres	Percent
Forest:		
Commercial	11,899,500	59.9
Withdrawn	40,200	0.2
Non-productive	2,900	[2]
Total forest	11,942,600	60.1
Non-forest:		
Idle	1,574,700	7.9
Agriculture	4,849,600	24.4
Marsh	466,800	2.4
Dune and beach	28,900	0.1
Urban and other[3]	465,400	2.3
Total non-forest	7,385,400	37.1
Total land	19,328,000	97.2
Total water	547,200	2.8
All classes	19,875,200	100.0

[1] From U. S. Bureau of the Census, 1940.

[2] Less than 0.05 percent.

[3] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

Table 2. - Ownership of land in South Carolina, 1947

Class of ownership	All land		Commercial forest land	
	Acres	Percent	Acres	Percent
Public:				
National forest	581,700	3.0	516,000	4.3
Indian	4,300	1/	2,600	1/
Other federal	265,200	1.4	141,000	1.2
Total federal	851,200	4.4	659,600	5.5
State	429,900 2/	2.2	172,300 3/	1.5
County and municipal	53,900	0.3	21,500	0.2
Total public	1,335,000	6.9	853,400	7.2
Private	17,993,000	93.1	11,046,100	92.8
All classes	19,328,000	100.0	11,899,500	100.0

1/ Less than 0.05 percent.

2/ Includes 148,100 acres under long-term lease from the Federal Government.

3/ Includes 122,800 acres under long-term lease from the Federal Government.

Table 3. - Ownership of all private properties of 1,000 acres or more in South Carolina, 1946[1]

Class of ownership	Distribution of all land[2]	
	Acres	Percent
Corporate:		
Pulp company	642,900	15.5
Lumber company	688,700	16.6
Other forest industry	91,500	2.2
Bank, loan, and insurance	44,600	1.1
Railroad	17,600	0.4
Other	372,300	9.0
Total corporate	1,857,600	44.8
Individual:		
Estate, club, preserve	385,700	9.3
Farmer	1,035,600	24.9
Lumberman	338,100	8.1
Other forest industry	11,400	0.3
Other individual	501,300	12.1
Total individual	2,272,100	54.7
Unknown	20,900	0.5
All classes	4,150,600	100.0

1/ Data taken from county tax rolls, as of January 1, 1946.

2/ Includes forest and non-forest land on properties 1,000 acres and larger in size.

Table 4. - Commercial forest area of South Carolina by forest type and stand size, 1947[1]

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	47,400	358,300	315,300	221,400	135,000	1,077,400
Loblolly pine	497,700	1,291,500	754,200	821,500	223,400	3,588,300
Shortleaf pine	87,700	553,700	970,300	294,800	218,300	2,124,800
Pond pine	27,800	198,500	104,700	77,900	124,700	533,600
Cypress	54,900	111,100	64,500	17,200	-	247,700
Lowland hdwds.	492,200	1,080,800	495,200	661,400	159,700	2,889,300
Upland hdwds.	64,000	175,800	354,600	264,100	6,000	864,500
Scrub oak	-	-	9,100	542,600	22,200	573,900
All types	1,271,700	3,769,700	3,067,900	2,900,900	889,300	11,899,500
Percent	10.7	31.7	25.8	24.4	7.4	100.0

---

[1] See description of forest types and stand-size classes in the appendix.

Table 5. - Net volume 1/ of saw timber in South Carolina by species and stand size, 1947

SOUND TREES (in thousand board feet)

Species 2/	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	357,300	1,397,100	246,300	191,900	67,100	2,259,700
Loblolly pine	3,900,000	4,963,600	613,100	396,600	43,500	9,916,800
Shortleaf pine	421,700	1,453,000	619,400	68,700	18,000	2,580,800
Other pines	333,000	905,000	122,400	81,600	4,000	1,446,000
Total	5,012,000	8,718,700	1,601,200	738,800	132,600	16,203,300
Cypress	546,800	666,100	65,400	13,900	-	1,292,200
Hemlock	32,400	400	-	-	-	32,800
Cedar	1,400	13,600	12,500	3,900	-	31,400
Total sftwds.	5,592,600	9,398,800	1,679,100	756,600	132,600	17,559,700
Hardwoods:						
Tupelo	1,039,900	2,172,200	131,400	48,000	6,100	3,397,600
Sweetgum	1,150,500	1,055,000	151,600	62,600	5,200	2,424,900
Soft maple	202,200	445,100	39,500	1,900	-	688,700
Yellow-poplar	438,800	574,000	160,200	30,900	3,800	1,207,700
Other soft hdwds.	63,000	86,500	10,400	-	17,100	177,000
Total	2,894,400	4,332,800	493,100	143,400	32,200	7,895,900
Red oaks	866,000	762,800	235,000	62,800	3,900	1,930,500
White oaks	253,600	338,800	76,400	24,000	2,800	695,600
Hickory	208,300	237,900	56,300	22,200	-	524,700
Ash	211,300	163,900	41,900	-	-	417,100
Sycamore, birch	205,000	230,000	48,900	13,000	2,500	499,400
Total	1,744,200	1,733,400	458,500	122,000	9,200	4,067,300
Total hdwds.	4,638,600	6,066,200	951,600	265,400	41,400	11,963,200
All sound trees	10,231,200	15,465,000	2,630,700	1,022,000	174,000	29,522,900
Percent	34.6	52.4	8.9	3.5	0.6	100.0

1/ Log scale, International 1/4-inch rule.

2/ See appendix for species combined with others.

Table 6. - Net volume[1] of saw timber in South Carolina by species and diameter class, 1947

SOUND TREES

Species	10-12 inches[2]	14-18 inches	20-24 inches	26 + inches	All diameters	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Softwoods:						
Longleaf pine	1,206,600	894,100	150,200	8,800	2,259,700	7.7
Loblolly pine	3,072,400	4,575,400	1,576,700	692,300	9,916,800	33.6
Shortleaf pine	1,630,300	816,600	130,000	3,900	2,580,800	8.7
Other pines	524,800	804,000	100,700	16,500	1,446,000	4.9
Total	6,434,100	7,090,100	1,957,600	721,500	16,203,300	54.9
Cypress	407,300	534,500	165,800	184,600	1,292,200	4.4
Hemlock	1,900	2,000	17,600	11,300	32,800	0.1
Cedar	24,300	7,100	-	-	31,400	0.1
Total sftwds.	6,867,600	7,633,700	2,141,000	917,400	17,559,700	59.5
Hardwoods:						
Tupelo	813,100	1,989,700	446,800	148,000	3,397,600	11.5
Sweetgum	438,600	1,275,900	479,700	230,700	2,424,900	8.2
Soft maple	136,200	412,600	100,900	39,000	688,700	2.3
Yellow-poplar	170,300	678,600	290,900	67,900	1,207,700	4.1
Other soft hdwds.	37,600	94,600	40,700	4,100	177,000	0.6
Total	1,595,800	4,451,400	1,359,000	489,700	7,895,900	26.7
Red oaks	298,000	802,100	491,400	339,000	1,930,500	6.5
White oaks	145,600	357,600	112,500	79,900	695,600	2.4
Hickory	90,000	282,500	110,100	42,100	524,700	1.8
Ash	74,000	157,700	107,100	78,300	417,100	1.4
Sycamore, birch	102,800	273,000	88,100	35,500	499,400	1.7
Total	710,400	1,872,900	909,200	574,800	4,067,300	13.8
Total hdwds.	2,306,200	6,324,300	2,268,200	1,064,500	11,963,200	40.5
All sound trees	9,173,800	13,958,000	4,409,200	1,981,900	29,522,900	100.0
Percent	31.1	47.3	14.9	6.7	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods not included.

Table 7. - Net volume[1] of saw timber in South Carolina by forest type and stand size, 1947

SOUND TREES (in thousand board feet)

Forest type[2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	332,400	1,446,200	292,300	90,800	64,300	2,226,000
Loblolly pine	4,656,700	5,405,600	643,400	340,600	25,400	11,071,700
Shortleaf pine	596,900	1,790,900	802,400	48,400	19,000	3,257,600
Pond pine	232,000	743,200	85,000	24,400	34,800	1,119,400
Cypress	566,300	794,900	27,600	2,600	-	1,391,400
Lowland hdwds.	3,600,200	4,847,700	508,600	351,200	26,400	9,334,100
Upland hdwds.	246,700	436,500	268,700	65,100	4,100	1,021,100
Scrub oak	-	-	2,700	98,900	-	101,600
All types	10,231,200	15,465,000	2,630,700	1,022,000	174,000	29,522,900
Percent	34.6	52.4	8.9	3.5	0.6	100.0

[1] Log scale, International 1/4-inch rule.

[2] See description of forest types and stand-size classes in the appendix.

Table 8. - Net volume[1] of all trees in South Carolina by species and stand size, 1947

SOUND TREES (in thousand cords)

Species	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	944	5,136	1,789	972	187	9,028
Loblolly pine	9,625	15,958	4,961	1,840	178	32,562
Shortleaf pine	1,156	6,364	5,687	499	89	13,795
Other pines	843	2,983	1,204	288	109	5,427
Total	12,568	30,441	13,641	3,599	563	60,812
Cypress	1,429	2,543	685	85	-	4,742
Hemlock	77	1	1	-	-	79
Cedar	10	152	148	30	5	345
Total sftwds.	14,084	33,137	14,475	3,714	568	65,978
Hardwoods:						
Tupelo	3,611	9,702	1,412	223	21	14,969
Sweetgum	3,565	4,621	1,823	334	41	10,384
Soft maple	832	2,363	516	14	-	3,725
Yellow-poplar	1,209	1,981	772	117	16	4,095
Other soft hdwds.	225	383	412	10	40	1,070
Total	9,442	19,050	4,935	698	118	34,243
Red oaks	2,635	2,970	1,681	343	17	7,646
White oaks	860	1,760	1,141	309	14	4,084
Hickory	669	965	727	121	52	2,534
Ash	784	856	419	17	-	2,076
Sycamore, birch	795	1,127	853	139	36	2,950
Holly, dogwood	180	251	117	15	3	566
Total	5,923	7,929	4,938	944	122	19,856
Total hdwds.	15,365	26,979	9,873	1,642	240	54,099
All sound trees	29,449	60,116	24,348	5,356	808	120,077
Percent	24.5	50.1	20.3	4.4	0.7	100.0

CULL TREES (in thousand cords)

Softwoods	240	829	1,222	449	288	3,028
Hardwoods	7,779	12,876	5,105	2,788	298	28,846
All cull trees	8,019	13,705	6,327	3,237	586	31,874

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[1] Sound wood and bark.

Table 9.-Net volume[1] of all trees in South Carolina by species and diameter class, 1947

SOUND TREES (in thousand cords)

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20 + inches	
Softwoods:							
Longleaf pine	837	2,019	1,926	1,665	2,214	367	9,028
Loblolly pine	3,245	3,950	4,139	4,871	11,220	5,137	32,562
Shortleaf pine	3,457	3,406	2,699	1,952	1,988	293	13,795
Other pines	684	921	766	795	1,988	273	5,427
Total	8,223	10,296	9,530	9,283	17,410	6,070	60,812
Cypress	526	777	570	688	1,357	824	4,742
Hemlock	4	3	2	4	5	61	79
Cedar	189	60	48	28	20	-	345
Total softwoods	8,942	11,136	10,150	10,003	18,792	6,955	65,978
Hardwoods:							
Tupelo	1,183	2,012	2,887	2,278	5,101	1,508	14,969
Sweetgum	1,196	1,381	1,386	1,318	3,391	1,712	10,384
Soft maple	502	678	788	377	1,040	340	3,725
Yellow-poplar	221	301	408	506	1,793	866	4,095
Other soft hdwds.	296	116	206	103	238	111	1,070
Total	3,398	4,488	5,675	4,582	11,563	4,537	34,243
Red oaks	1,012	979	859	812	1,983	2,001	7,646
White oaks	715	839	777	397	889	467	4,084
Hickory	458	361	397	247	703	368	2,534
Ash	318	397	273	226	418	444	2,076
Sycamore, birch	639	568	492	278	681	292	2,950
Holly, dogwood	189	164	96	42	70	5	566
Total	3,331	3,308	2,894	2,002	4,744	3,577	19,856
Total hardwoods	6,729	7,796	8,569	6,584	16,307	8,114	54,099
All sound trees	15,671	18,932	18,719	16,587	35,099	15,069	120,077
Percent	13.1	15.8	15.6	13.8	29.2	12.5	100.0

CULL TREES (in thousand cords)

Softwoods	410	353	701	484	672	408	3,028
Hardwoods	2,607	3,097	2,817	4,195	8,612	7,518	28,846
All cull trees	3,017	3,450	3,518	4,679	9,284	7,926	31,874

[1] Sound wood and bark.

Table 10. - Net volume[1/] of all trees in South Carolina by species and class of material, 1947

Species	Saw-timber trees		Pole timber trees	Total sound-tree volume		Total cull-tree volume
	Sawlogs	Upper stems				
	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Percent	Thousand cords
Softwoods:						
Longleaf pine	4,536	1,636	2,856	9,028	7.5	154
Loblolly pine	18,939	6,428	7,195	32,562	27.1	1,019
Shortleaf pine	4,995	1,937	6,863	13,795	11.5	824
Other pines	2,839	983	1,605	5,427	4.5	556
Total	31,309	10,984	18,519	60,812	50.6	2,553
Cypress	2,757	682	1,303	4,742	4.0	371
Hemlock	54	18	7	79	0.1	28
Cedar	76	20	249	345	0.3	76
Total sftwds.	34,196	11,704	20,078	65,978	55.0	3,028
Hardwoods:						
Tupelo	6,398	2,489	6,082	14,969	12.5	8,795
Sweetgum	4,704	1,717	3,963	10,384	8.6	2,041
Soft maple	1,262	495	1,968	3,725	3.1	3,096
Yellow-poplar	2,311	854	930	4,095	3.4	635
Other soft hdwds.	324	128	618	1,070	0.9	534
Total	14,999	5,683	13,561	34,243	28.5	15,101
Red oaks	3,454	1,342	2,850	7,646	6.4	5,416
White oaks	1,256	497	2,331	4,084	3.4	2,912
Hickory	946	372	1,216	2,534	2.1	995
Ash	799	289	988	2,076	1.7	801
Sycamore, birch	891	360	1,699	2,950	2.4	1,628
Holly, dogwood	117	-	449	566	0.5	262
Scrub oaks	-	-	-	-	-	1,731
Total	7,463	2,860	9,533	19,856	16.5	13,745
Total hdwds.	22,462	8,543	23,094	54,099	45.0	28,846
Total all species	56,658	20,247	43,172	120,077	100.0	31,874
Percent	47.2	16.9	35.9	100.0		

[1/] Sound wood and bark.

Table 11. - Net volume[1] of all trees in South Carolina by forest type and stand size, 1947

SOUND TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	881	5,438	2,018	400	155	8,892
Loblolly pine	12,941	19,631	6,362	1,719	187	40,840
Shortleaf pine	1,780	7,997	7,822	482	102	18,183
Pond pine	659	2,454	592	108	188	4,001
Cypress	1,562	3,192	554	44	-	5,352
Lowland hardwoods	10,815	19,593	4,806	1,538	158	36,910
Upland hardwoods	811	1,811	2,171	408	14	5,215
Scrub oak	-	-	23	657	4	684
All types	29,449	60,116	24,348	5,356	808	120,077

CULL TREES (in thousand cords)

Longleaf pine	74	105	189	482	52	902
Loblolly pine	1,649	2,528	1,152	695	220	6,244
Shortleaf pine	292	1,266	1,480	134	108	3,280
Pond pine	150	279	153	44	103	729
Cypress	665	904	41	10	-	1,620
Lowland hardwoods	4,634	7,855	2,271	1,440	64	16,264
Upland hardwoods	555	768	1,004	178	21	2,526
Scrub oak	-	-	37	254	18	309
All types	8,019	13,705	6,327	3,237	586	31,874

[1] Sound wood and bark.

Table 12. - Average volume[1] per acre of saw timber in South Carolina by forest type and stand size, 1947

SOUND TREES (in board feet)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S[2]	H[2]	S	H	S	H	S	H	S	H	S	H
Longleaf pine	6,750	257	3,994	42	921	6	391	20	423	54	2,028	38
Loblolly pine	7,921	1,435	3,636	550	685	168	354	61	106	8	2,639	447
Shortleaf pine	4,712	2,099	2,650	584	604	223	134	30	79	8	1,187	346
Pond pine	7,360	984	3,645	99	715	97	287	26	242	37	1,978	119
Cypress	5,018	5,290	3,947	3,210	274	154	152	-	-	-	2,964	2,652
Lowland hardwoods	866	6,449	554	3,932	219	808	266	265	7	159	453	2,777
Upland hardwoods	166	3,688	250	2,233	241	517	203	43	571	111	228	953
Scrub oak	-	-	-	-	-	300	158	24	-	-	149	28
All types	4,398	3,648	2,493	1,609	547	310	261	91	149	47	1,476	1,005

1/ Log scale, International 1/4-inch rule.

2/ S - softwoods, H - hardwoods.

Table 13. - Average volume[1] per acre of all trees in South Carolina by forest type and stand size, 1947

SOUND TREES (in standard cords)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S[2]	H[2]	S	H	S	H	S	H	S	H	S	H
Longleaf pine	17.1	1.5	14.5	0.6	6.1	0.3	1.6	0.2	1.0	0.1	7.8	0.4
Loblolly pine	20.0	6.0	12.3	2.9	6.7	1.7	1.7	0.4	0.7	0.1	9.1	2.3
Shortleaf pine	12.4	7.9	11.1	3.3	6.0	2.1	1.4	0.3	0.4	0.1	6.4	2.2
Pond pine	18.3	5.4	11.5	0.8	5.0	0.7	1.3	0.1	1.3	0.2	6.7	0.8
Cypress	11.4	17.0	12.7	16.0	6.8	1.8	2.6	-	-	-	10.2	11.4
Lowland hdwds.	2.1	19.8	1.8	16.3	0.6	9.1	1.0	1.3	[3]	1.0	1.4	11.4
Upland hdwds.	0.7	12.0	1.1	9.3	1.1	5.1	0.8	0.8	1.9	0.4	1.0	5.1
Scrub oak	-	-	-	-	-	2.5	1.0	0.2	0.2	-	0.9	0.3
All types	11.1	12.1	8.8	7.2	4.7	3.2	1.3	0.6	0.6	0.3	5.5	4.5

CULL TREES (in standard cords)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S	H	S	H	S	H	S	H	S	H	S	H
Longleaf pine	0.1	1.4	0.1	0.2	0.1	0.5	0.1	2.1	[3]	0.3	0.1	0.8
Loblolly pine	0.2	3.1	0.2	1.8	0.6	0.9	0.3	0.5	0.9	0.1	0.3	1.4
Shortleaf pine	0.6	2.8	0.5	1.8	0.6	0.9	0.2	0.2	0.2	0.3	0.5	1.1
Pond pine	0.2	5.2	0.5	1.0	0.3	1.1	0.6	[3]	0.3	0.5	0.4	1.0
Cypress	0.8	11.3	1.3	6.8	0.3	0.3	0.6	-	-	-	0.9	5.6
Lowland hdwds.	0.1	9.4	[3]	7.2	0.1	4.5	[3]	2.1	[3]	0.4	[3]	5.6
Upland hdwds.	0.1	8.6	-	4.4	0.1	2.7	[3]	0.6	2.0	1.6	0.1	2.9
Scrub oak	-	-	-	-	-	4.1	0.1	0.4	-	0.8	0.1	0.5
All types	0.2	6.1	0.2	3.4	0.4	1.7	0.2	1.0	0.3	0.3	0.3	2.4

[1] Sound wood and bark.

[2] S - Softwoods, H - Hardwoods.

[3] Less than 0.05 cords per acre.

Table 14. - Average volume[1] per acre of pole-timber trees in South Carolina by forest type and stand size, 1947

SOUND TREES (in standard cords)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S[2]	H[2]	S	H	S	H	S	H	S	H	S	H
Longleaf pine	0.8	0.8	3.7	0.3	3.5	0.2	0.5	[3]	0.2	[3]	2.4	0.2
Loblolly pine	0.7	2.5	2.5	1.6	4.8	1.2	0.8	0.2	0.4	0.1	2.2	1.2
Shortleaf pine	1.2	2.7	4.0	1.8	4.3	1.5	1.0	0.2	0.2	[3]	3.2	1.3
Pond pine	0.3	2.6	1.7	0.6	2.6	0.7	0.5	-	0.5	0.1	1.4	0.5
Cypress	0.3	3.1	4.1	5.3	6.1	1.4	2.2	-	-	-	3.6	3.4
Lowland hdwds.	0.1	3.4	0.2	6.1	0.1	6.9	0.3	0.6	-	0.6	0.2	4.2
Upland hdwds.	0.3	2.8	0.3	3.5	0.4	3.7	0.2	0.7	0.7	0.2	0.3	2.7
Scrub oak	-	-	-	-	-	1.7	0.5	0.2	0.2	-	0.5	0.2
All types	0.5	2.8	2.1	2.9	3.2	2.4	0.6	0.3	0.3	0.2	1.7	1.9

CULL TREES (in standard cords)

Forest type	S	H	S	H	S	H	S	H	S	H	S	H
Longleaf pine	[3]	0.5	[3]	0.1	[3]	0.3	[3]	0.2	-	0.3	[3]	0.2
Loblolly pine	[3]	0.8	[3]	0.7	0.2	0.5	0.1	0.3	0.1	[3]	0.1	0.5
Shortleaf pine	0.1	0.9	0.2	0.7	0.2	0.5	0.1	0.1	0.1	0.1	0.2	0.5
Pond pine	-	1.2	0.1	0.3	0.1	0.5	0.1	-	-	0.1	0.1	0.3
Cypress	0.1	1.2	0.1	1.4	0.3	0.3	0.6	-	-	-	0.2	0.9
Lowland hdwds.	[3]	1.6	[3]	1.7	-	1.9	[3]	0.5	[3]	0.2	[3]	1.4
Upland hdwds.	-	1.4	-	1.5	[3]	1.2	[3]	0.4	-	0.4	[3]	1.0
Scrub oak	-	-	-	-	-	3.0	[3]	0.3	-	0.7	[3]	0.4
All types	[3]	1.2	0.1	1.0	0.1	0.8	[3]	0.3	[3]	0.1	0.1	0.7

[1] Sound wood and bark.

[2] S - Softwoods, H - Hardwoods.

[3] Less than 0.05 cords per acre.

Table 15. - Net annual growth[1] of saw timber[2] in South Carolina by stand size and species group, 1946

(in thousand board feet)

Stand size	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	All species
Large saw timber	192,900	90,000	57,600	340,500
Small saw timber	570,700	223,500	86,200	880,400
Pole timber	107,300	29,700	26,400	163,400
Other stand sizes	59,600	7,300	5,900	72,800
All stands	930,500	350,500	176,100	1,457,100

[1] Log scale, International 1/4-inch rule, on sound-tree growing stock.

[2] Includes hardwoods 11.0 to 12.9 inches d.b.h.

Table 16. - Net annual growth[1] of timber in South Carolina by stand size and species group, 1946

ON SAW-TIMBER TREES (in standard cords)

Stand size	Softwoods		Gums, soft maple and yellow-poplar	Other hardwoods	All species
	Yellow pine	Other			
Large saw timber	423,900	23,900	238,300	158,700	844,800
Small saw timber	1,554,500	51,400	623,000	260,900	2,489,800
Pole timber	765,200	15,200	136,200	130,800	1,047,400
Other stand sizes	268,400	1,100	18,100	22,300	309,900
All stands	3,012,000	91,600	1,015,600	572,700	4,691,900
ON POLE TIMBER TREES (in standard cords)					
Large saw timber	- 2,800	- 100	9,300	19,400	25,800
Small saw timber	37,000	19,400	- 11,900	57,200	101,700
Pole timber	396,100	20,700	113,400	134,200	664,400
Other stand sizes	50,000	2,600	10,100	42,900	105,600
All stands	480,300	42,600	120,900	253,700	897,500
Saw-timber and pole timber trees[2]	3,492,300	134,200	1,136,500	826,400	5,589,400

[1] Sound wood and bark.

[2] Excluding cull trees.

Table 17. – Average net growth[1] of saw timber per acre in South Carolina by forest type and stand size, 1947

(in board feet)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Other stand sizes	All stands
Longleaf pine	227	294	113	20	148
Loblolly pine	382	293	73	27	181
Shortleaf pine	200	182	69	10	90
Pond pine	353	239	64	20	128
Cypress	319	332	38	5	230
Lowland hardwoods	248	258	56	22	154
Upland hardwoods	117	119	48	18	58
All types	295	257	69	21	137

[1] Log scale, International 1/4-inch rule, on sound-tree growing stock. Applies only to stands in which there was no cutting during 1947.

Table 18. - Average net growth[1] of timber per acre in South Carolina by forest type and stand size, 1947

(in cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Other stand sizes	All stands
Longleaf pine	0.6	0.9	0.6	0.1	0.6
Loblolly pine	1.1	0.9	0.8	0.2	0.7
Shortleaf pine	0.7	0.8	0.7	0.1	0.6
Pond pine	0.9	0.7	0.5	0.1	0.4
Cypress	0.8	0.9	0.5	0.1	0.7
Lowland hardwoods	0.7	0.7	0.6	0.1	0.5
Upland hardwoods	0.3	0.4	0.3	0.1	0.3
All types	0.8	0.8	0.7	0.1	0.6

1/ Sound wood and bark, on the entire sound-tree growing stock, excluding cull trees. Applies only to stands in which there was no cutting during 1947.

Table 19. - Commodity drain[1] from saw timber in South Carolina by commodity and species group, 1946

SOUND TREES

Commodity	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	All species	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Lumber	748,931	200,259	65,261	1,014,451	66.7
Veneer bolts	18,581	127,814	3,093	149,488	9.8
Cooperage bolts	-	-	3,768	3,768	0.3
Pulpwood bolts	230,385	16,841	-	247,226	16.3
Poles	21,799	-	-	21,799	1.4
Piling	3,271	-	-	3,271	0.2
Posts	1,043	112	3,113	4,268	0.3
Mine timbers	595	-	-	595	3/
Crossties (hewn)	6,106	3,830	533	10,469	0.7
Shingles	150	-	-	150	3/
Fuelwood	39,323	3,785	13,185	56,293	3.7
Other products[2]	602	7,303	515	8,420	0.6
All commodities	1,070,786	359,944	89,468	1,520,198	100.0

[1] Log scale, International 1/4-inch rule.

[2] Handles, shuttle blocks, hardwood dimension and miscellaneous farm use.

[3] Less than 0.05 percent.

Table 20. - Commodity drain[1] from timber in South Carolina by commodity and species groups, 1946

SOUND TREES

Commodity	Softwoods		Gums, soft maple and yellow-poplar	Other hardwoods	All species	
	Yellow pine	Other				
	Standard cords	Standard cords	Standard cords	Standard cords	Standard cords	Percent
Lumber	1,645,200	163,600	486,500	158,500	2,453,800	48.8
Veneer bolts	50,800	300	294,000	7,100	352,200	7.0
Cooperage bolts	-	-	-	10,600	10,600	0.2
Pulpwood bolts	886,100	-	93,500	-	979,600	19.5
Poles	59,800	-	-	-	59,800	1.2
Piling	8,900	-	-	-	8,900	0.2
Posts	6,200	16,600	12,500	15,100	50,400	1.0
Mine timbers	3,300	-	-	-	3,300	0.1
Crossties (hewn)	13,200	-	11,800	1,700	26,700	0.5
Shingles	400	-	-	-	400	3/
Fuelwood	369,400	500	212,400	434,600	1,016,900	20.2
Other products[2]	30,000	1,100	26,800	9,900	67,800	1.3
All commodities	3,073,300	182,100	1,137,500	637,500	5,030,400	100.0

CULL TREES

All commodities	199,500	400	113,000	251,100	564,000	-

[1] Sound wood and bark.

[2] Handles, shuttle blocks, hardwood dimension, and miscellaneous farm use.

[3] Less than 0.05 percent.

Table 21. - Net change[1] in saw-timber growing stock[2] in South Carolina by species group, 1946

SOUND TREES

Item	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	Total
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.
Growing stock, Jan. 1, 1946	17,700,000	7,905,300	3,980,700	29,586,000
Net growth	930,500	350,500	176,100	1,457,100
Commodity drain	1,070,800	359,900	89,500	1,520,200
Net change	- 140,300	-9,400	+ 86,600	- 63,100
Growing stock, Jan. 1, 1947	17,559,700	7,895,900	4,067,300	29,522,900
Percent change	- 0.8	- 0.1	+ 2.2	- 0.2

[1] Log scale, International 1/4-inch rule.

[2] Includes hardwoods 11.0 to 12.9 inches d.b.h.

Table 22. - Net change in growing stock of all timber[1] in South Carolina by species group, 1946

ALL TIMBER (in standard cords)

Item	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	Total
Growing stock, Jan. 1, 1946	65,606,600	34,244,000	19,667,000	119,517,600
Net growth:				
On trees 5.0" and larger, Jan. 1, 1946	3,288,500	973,800	694,100	4,956,400
Trees recruiting to 5.0" in 1946	338,000	162,700	132,300	633,000
Total	3,626,500	1,136,500	826,400	5,589,400
Commodity drain	3,255,400	1,137,500	637,500	5,030,400
Net change	+ 371,100	- 1,000	+ 188,900	+ 559,000
Growing stock, Jan. 1, 1947	65,977,700	34,243,000	19,855,900	120,076,600
Percent change	+ 0.6	- 0.0	+ 1.0	+ 0.5

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[1] The entire sound-tree growing stock, excluding cull trees.

Table 1a. - Gross area[1] of the Southern Coastal Plain by broad use class, 1947

Class of use	Area	
	Acres	Percent
Forest:		
Commercial	3,026,300	56.9
Withdrawn	5,300	0.1
Non-productive	600	[2]
Total forest	3,032,200	57.0
Non-forest:		
Idle	571,300	10.8
Agriculture	1,234,800	23.2
Marsh	230,300	4.3
Dune and beach	11,900	0.2
Urban and other[3]	79,100	1.5
Total non-forest	2,127,400	40.0
Total land	5,159,600	97.0
Total water	158,800	3.0
All classes	5,318,400	100.0

1/ From U. S. Bureau of the Census, 1940.

2/ Less than 0.05 percent.

3/ Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

Table 2a. - Ownership of land in the Southern Coastal Plain, 1947

Class of ownership	All land		Commercial forest land	
	Acres	Percent	Acres	Percent
Public:				
National forest	-	-	-	-
Indian	-	-	-	-
Other federal	19,100	0.4	1,900	0.1
Total federal	19,100	0.4	1,900	0.1
State	53,700	1.0	21,000	0.6
County and municipal	6,200	0.1	2,600	0.1
Total public	79,000	1.5	25,500	0.8
Private	5,080,600	98.5	3,000,800	99.2
All classes	5,159,600	100.0	3,026,300	100.0

Table 3a. - Ownership of all private properties of 1,000 acres or more in the Southern Coastal Plain, 1946[1]

Class of ownership	Distribution of all land[2]	
	Acres	Percent
Corporate:		
Pulp company	188,600	13.5
Lumber company	178,100	12.7
Other forest industry	32,900	2.3
Bank, loan, and insurance	8,000	0.6
Railroad	17,600	1.3
Other	82,600	5.9
Total corporate	507,800	36.3
Individual:		
Estate, club, preserve	218,400	15.7
Farmer	401,400	28.7
Lumberman	112,100	8.0
Other forest industry	6,900	0.5
Other individual	141,200	10.1
Total individual	880,000	63.0
Unknown	9,600	0.7
All classes	1,397,400	100.0

1/ Data taken from county tax rolls, as of January 1, 1946.

2/ Includes forest and non-forest land on properties 1,000 acres and larger in size.

Table 4a. - Commercial forest area of the Southern Coastal Plain by forest type and stand size, 1947[1]

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	18,800	193,100	159,500	91,200	62,000	524,600
Loblolly pine	156,800	268,400	195,600	101,600	75,900	798,300
Shortleaf pine	3,300	24,900	10,800	200	3,300	42,500
Pond pine	14,100	57,500	60,500	14,900	114,400	261,400
Cypress	16,000	21,100	64,500	-	-	101,600
Lowland hdwds.	118,000	375,200	151,800	83,000	51,200	779,200
Upland hdwds.	2,000	13,200	36,600	104,300	500	156,600
Scrub oak	-	-	9,100	330,800	22,200	362,100
All types	329,000	953,400	688,400	726,000	329,500	3,026,300
Percent	10.9	31.5	22.7	24.0	10.9	100.0

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[1] See description of forest types and stand-size classes in the appendix.

Table 5a. - Net volume[1] of saw timber in the Southern Coastal Plain by species and stand size, 1947

SOUND TREES (in thousand board feet)

Species[2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	168,600	695,900	117,900	80,400	23,300	1,086,100
Loblolly pine	1,229,000	901,800	145,500	87,100	22,500	2,385,900
Shortleaf pine	25,300	69,300	7,700	7,700	-	110,000
Other pines	154,500	251,200	66,600	49,100	4,000	525,400
Total	1,577,400	1,918,200	337,700	224,300	49,800	4,107,400
Cypress	163,300	210,700	50,000	-	-	424,000
Cedar	-	-	-	700	-	700
Total sftwds.	1,740,700	2,128,900	387,700	225,000	49,800	4,532,100
Hardwoods:						
Tupelo	321,900	719,800	40,400	3,600	2,500	1,088,200
Sweetgum	322,500	333,500	44,300	10,100	1,200	711,600
Soft maple	38,500	153,200	13,200	1,700	-	206,600
Yellow-poplar	165,000	145,800	10,200	-	-	321,000
Other soft hdwds.	12,600	2,500	1,300	-	-	16,400
Total	860,500	1,354,800	109,400	15,400	3,700	2,343,800
Red oaks	269,000	259,400	46,800	17,500	1,900	594,600
White oaks	32,500	58,100	15,500	3,300	1,300	110,700
Hickory	39,700	53,900	9,100	7,200	-	109,900
Ash	56,300	53,100	6,800	-	-	116,200
Sycamore, birch	32,200	23,900	11,900	700	-	68,700
Total	429,700	448,400	90,100	28,700	3,200	1,000,100
Total hdwds.	1,290,200	1,803,200	199,500	44,100	6,900	3,343,900
All sound trees	3,030,900	3,932,100	587,200	269,100	56,700	7,876,000
Percent	38.5	49.9	7.5	3.4	0.7	100.0

[1] Log scale, International 1/4-inch rule.

[2] See appendix for species combined with others.

Table 6a. - Net volume[1] of saw timber in the Southern Coastal Plain by species and diameter class, 1947

SOUND TREES

Species	10-12 inches[2]	14-18 inches	20-24 inches	26 + inches	All diameters	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Softwoods:						
Longleaf pine	637,000	344,900	95,400	8,800	1,086,100	13.8
Loblolly pine	591,000	931,500	554,500	308,900	2,385,900	30.3
Shortleaf pine	52,400	53,700	-	3,900	110,000	1.4
Other pines	180,100	274,200	54,600	16,500	525,400	6.7
Total	1,460,500	1,604,300	704,500	338,100	4,107,400	52.2
Cypress	111,000	190,000	72,900	50,100	424,000	5.3
Cedar	700	-	-	-	700	[3]
Total sftwds.	1,572,200	1,794,300	777,400	388,200	4,532,100	57.5
Hardwoods:						
Tupelo	287,500	666,100	113,300	21,300	1,088,200	13.8
Sweetgum	144,000	370,800	179,800	17,000	711,600	9.1
Soft maple	31,400	125,300	42,700	7,200	206,600	2.6
Yellow-poplar	46,300	142,900	125,900	5,900	321,000	4.1
Other soft hdwds.	3,800	5,200	3,300	4,100	16,400	0.2
Total	513,000	1,310,300	465,000	55,500	2,343,800	29.8
Red oaks	88,200	241,700	149,100	115,600	594,600	7.5
White oaks	25,600	64,500	15,400	5,200	110,700	1.4
Hickory	21,200	68,900	18,200	1,600	109,900	1.4
Ash	17,600	48,800	27,100	22,700	116,200	1.5
Sycamore, birch	25,100	34,800	5,000	3,800	68,700	0.9
Total	177,700	458,700	214,800	148,900	1,000,100	12.7
Total hdwds.	690,700	1,769,000	679,800	204,400	3,343,900	42.5
All sound trees	2,262,900	3,563,300	1,457,200	592,600	7,876,000	100.0
Percent	28.7	45.3	18.5	7.5	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods not included.

[3] Less than 0.05 percent.

Table 7a. - Net volume[1] of saw timber in the Southern Coastal Plain by forest type and stand size, 1947

SOUND TREES (in thousand board feet)

Forest type[2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	169,000	709,100	152,200	80,400	20,700	1,131,400
Loblolly pine	1,622,000	1,162,400	170,400	29,500	9,800	2,994,100
Shortleaf pine	34,100	76,700	8,900	-	400	120,100
Pond pine	98,300	208,300	61,400	13,200	23,300	404,500
Cypress	107,400	157,900	27,600	-	-	292,900
Lowland hdwds.	994,000	1,595,700	140,800	55,000	-	2,785,500
Upland hdwds.	6,100	22,000	23,200	21,600	2,500	75,400
Scrub oak	-	-	2,700	69,400	-	72,100
All types	3,030,900	3,932,100	587,200	269,100	56,700	7,876,000
Percent	38.5	49.9	7.5	3.4	0.7	100.0

[1] Log scale, International 1/4-inch rule.

[2] See description of forest types and stand-size classes in the appendix.

Table 8a. - Net volume[1] of all trees in the Southern Coastal Plain by species and stand size, 1947

SOUND TREES (in thousand cords)

Species	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	443	2,718	815	517	68	4,561
Loblolly pine	2,935	2,941	870	310	92	7,148
Shortleaf pine	70	253	49	25	1	398
Other pines	395	858	270	137	71	1,731
Total	3,843	6,770	2,004	989	232	13,838
Cypress	404	652	603	-	-	1,659
Cedar	1	-	9	7	-	17
Total sftwds.	4,248	7,422	2,616	996	232	15,514
Hardwoods:						
Tupelo	1,226	3,228	451	31	6	4,942
Sweetgum	1,014	1,293	216	40	11	2,574
Soft maple	174	767	233	4	-	1,178
Yellow-poplar	439	445	60	-	-	944
Other soft hdwds.	47	24	38	-	-	109
Total	2,900	5,757	998	75	17	9,747
Red oaks	816	1,035	402	64	6	2,323
White oaks	123	283	166	118	3	693
Hickory	135	195	130	68	1	529
Ash	178	245	120	-	-	543
Sycamore, birch	129	197	157	3	-	486
Holly, dogwood	27	33	22	6	3	91
Total	1,408	1,988	997	259	13	4,665
Total hdwds.	4,308	7,745	1,995	334	30	14,412
All sound trees	8,556	15,167	4,611	1,330	262	29,926
Percent	28.6	50.7	15.4	4.4	0.9	100.0

CULL TREES (in thousand cords)

Softwoods	43	61	153	51	67	375
Hardwoods	2,004	3,406	1,196	625	98	7,329
All cull trees	2,047	3,467	1,349	676	165	7,704

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[1] Sound wood and bark.

Table 9a. - Net volume[1] of all trees in the Southern Coastal Plain by species and diameter class, 1947

SOUND TREES (in thousand cords)

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20 + inches	
Softwoods:							
Longleaf pine	416	1,145	1,068	841	852	239	4,561
Loblolly pine	530	609	799	971	2,275	1,964	7,148
Shortleaf pine	26	76	78	76	134	8	398
Other pines	66	268	267	281	683	166	1,731
Total	1,038	2,098	2,212	2,169	3,944	2,377	13,838
Cypress	265	292	171	171	479	281	1,659
Cedar	10	5	2	-	-	-	17
Total softwoods	1,313	2,395	2,385	2,340	4,423	2,658	15,514
Hardwoods:							
Tupelo	321	672	1,085	808	1,710	346	4,942
Sweetgum	81	249	321	438	990	495	2,574
Soft maple	260	175	215	87	316	125	1,178
Yellow-poplar	-	37	66	139	378	324	944
Other soft hdwds.	17	15	33	11	13	20	109
Total	679	1,148	1,720	1,483	3,407	1,310	9,747
Red oaks	340	266	222	246	595	654	2,323
White oaks	137	170	106	70	159	51	693
Hickory	68	102	76	59	174	50	529
Ash	66	104	70	56	130	117	543
Sycamore, birch	117	87	108	67	86	21	486
Holly, dogwood	23	37	13	1	17	-	91
Total	751	766	595	499	1,161	893	4,665
Total hardwoods	1,430	1,914	2,315	1,982	4,568	2,203	14,412
All sound trees	2,743	4,309	4,700	4,322	8,991	4,861	29,926
Percent	9.2	14.4	15.7	14.4	30.0	16.3	100.0

CULL TREES (in thousand cords)

Softwoods	46	23	104	52	81	69	375
Hardwoods	632	666	709	1,098	2,168	2,056	7,329
All cull trees	678	689	813	1,150	2,249	2,125	7,704

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[1] Sound wood and bark.

Table 10a. - Net volume[1] of all trees in the Southern Coastal Plain by species and class of material, 1947

Species	Saw-timber trees		Pole timber trees	Total sound-tree volume		Total cull-tree volume
	Sawlogs	Upper stems				
	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Percent	Thousand cords
Softwoods:						
Longleaf pine	2,205	795	1,561	4,561	15.2	94
Loblolly pine	4,523	1,486	1,139	7,148	23.9	144
Shortleaf pine	217	79	102	398	1.3	4
Other pines	1,047	350	334	1,731	5.8	78
Total	7,992	2,710	3,136	13,838	46.2	320
Cypress	881	221	557	1,659	5.5	55
Cedar	1	1	15	17	0.1	-
Total sftwds.	8,874	2,932	3,708	15,514	51.8	375
Hardwoods:						
Tupelo	2,055	809	2,078	4,942	16.5	2,517
Sweetgum	1,416	507	651	2,574	8.6	480
Soft maple	380	148	650	1,178	3.9	889
Yellow-poplar	618	223	103	944	3.2	166
Other soft hdwds.	32	12	65	109	0.4	49
Total	4,501	1,699	3,547	9,747	32.6	4,101
Red oaks	1,082	413	828	2,323	7.8	1,554
White oaks	201	79	413	693	2.3	560
Hickory	204	79	246	529	1.8	191
Ash	222	81	240	543	1.8	171
Sycamore, birch	122	52	312	486	1.6	207
Holly, dogwood	18	-	73	91	0.3	45
Scrub oaks	-	-	-	-	-	500
Total	1,849	704	2,112	4,665	15.6	3,228
Total hdwds.	6,350	2,403	5,659	14,412	48.2	7,329
Total all species	15,224	5,335	9,367	29,926	100.0	7,704
Percent	50.9	17.8	31.3	100.0		

[1] Sound wood and bark.

Table 11a. - Net volume[1] of all trees in the Southern Coastal Plain by forest type and stand size, 1947

SOUND TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	443	2,864	944	297	45	4,593
Loblolly pine	4,417	4,215	1,282	132	81	10,127
Shortleaf pine	95	281	65	-	1	442
Pond pine	272	726	321	50	123	1,492
Cypress	272	510	554	-	-	1,336
Lowland hardwoods	3,036	6,481	1,230	206	-	10,953
Upland hardwoods	21	90	192	143	8	454
Scrub oak	-	-	23	502	4	529
All types	8,556	15,167	4,611	1,330	262	29,926

CULL TREES (in thousand cords)

Longleaf pine	48	68	48	171	22	357
Loblolly pine	613	792	418	33	39	1,895
Shortleaf pine	4	23	14	-	2	43
Pond pine	95	37	99	2	72	305
Cypress	74	119	41	-	-	234
Lowland hardwoods	1,208	2,382	627	283	-	4,500
Upland hardwoods	5	46	65	45	12	173
Scrub oak	-	-	37	142	18	197
All types	2,047	3,467	1,349	676	165	7,704

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[1] Sound wood and bark

Table 12a. - Average volume[1] per acre of saw timber in the Southern Coastal Plain by forest type and stand size, 1947

SOUND TREES (in board feet)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S[2]	H[2]	S	H	S	H	S	H	S	H	S	H
Longleaf pine	8,409	552	3,602	69	949	5	834	48	290	44	2,096	60
Loblolly pine	8,089	2,255	3,370	961	632	238	232	58	116	13	2,917	833
Shortleaf pine	10,142	253	2,753	327	552	264	-	-	130	-	2,544	278
Pond pine	5,699	1,278	3,331	293	849	168	884	-	180	24	1,365	183
Cypress	3,913	2,777	4,291	3,212	274	154	-	-	-	-	1,681	1,201
Lowland hardwoods	1,164	7,262	474	3,779	198	730	399	263	39	8	485	3,089
Upland hardwoods	-	3,112	44	1,622	208	427	189	19	3/	3/	191	291
Scrub oak	-	-	-	-	-	300	179	30	-	-	164	35
All types	5,290	3,922	2,233	1,891	563	290	310	61	151	21	1,498	1,105

[1] Log scale, International 1/4-inch rule.

[2] S - softwoods, H - hardwoods.

[3] Included with lowland hardwood type due to small acreage.

Table 13a. - Average volume[1] per acre of all trees in the Southern Coastal Plain by forest type and stand size, 1947

SOUND TREES (in standard cords)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S[2]	H[2]	S	H	S	H	S	H	S	H	S	H
Longleaf pine	20.9	2.5	13.9	1.0	5.8	0.2	3.0	0.3	0.6	0.1	8.2	0.5
Loblolly pine	19.9	8.3	11.5	4.2	4.4	2.2	1.0	0.3	1.0	0.1	9.0	3.6
Shortleaf pine	26.8	2.3	9.8	1.5	4.2	1.9	-	-	0.5	-	8.9	1.5
Pond pine	13.9	5.4	11.8	0.8	4.2	1.1	3.4	-	0.9	0.1	4.9	0.8
Cypress	7.7	9.2	8.6	15.6	6.8	1.8	-	-	-	-	7.3	5.8
Lowland hdwds.	2.8	23.0	1.5	15.8	0.5	7.6	1.4	1.0	0.1	3/	1.4	12.7
Upland hdwds.	-	10.5	0.5	6.3	0.6	4.6	0.8	0.6	4/	4/	0.7	2.2
Scrub oak	-	-	-	-	-	2.5	1.2	0.4	0.2	-	1.1	0.4
All types	12.9	13.1	7.8	8.1	3.8	2.9	1.4	0.5	0.7	0.1	5.1	4.8
CULL TREES (in standard cords)												
Longleaf pine	0.2	2.3	0.1	0.3	0.1	0.2	0.1	1.7	0.1	0.3	0.1	0.6
Loblolly pine	0.2	3.7	0.1	2.9	0.4	1.7	3/	0.3	0.4	0.1	0.2	2.2
Shortleaf pine	-	1.4	3/	0.9	-	1.3	-	-	0.2	0.3	3/	1.0
Pond pine	0.1	6.7	0.1	0.6	0.4	1.3	0.2	-	0.2	0.4	0.2	1.0
Cypress	0.3	4.3	0.1	5.6	0.3	0.3	-	-	-	-	0.3	2.0
Lowland hdwds.	0.1	10.2	3/	6.3	3/	4.1	3/	3.4	0.1	0.1	3/	5.7
Upland hdwds.	-	2.2	-	3.5	-	1.8	-	0.4	4/	4/	3/	1.1
Scrub oak	-	-	-	-	-	4.1	0.1	0.3	-	0.8	0.1	0.5
All types	0.1	6.1	0.1	3.6	0.2	1.7	0.1	0.9	0.2	0.3	0.1	2.4

1/ Sound wood and bark.

2/ S - Softwoods, H - Hardwoods.

3/ Less than 0.05 cords per acre.

4/ Included with lowland hardwood type due to small acreage.

Table 14a. - Average volume[1] per acre of pole-timber trees in the Southern Coastal Plain by forest type and stand size, 1947

SOUND TREES (in standard cords)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S[2]	H[2]	S	H	S	H	S	H	S	H	S	H
Longleaf pine	1.0	0.2	4.0	0.5	3.1	0.1	0.8	0.1	0.2	0.1	2.6	0.2
Loblolly pine	0.3	2.9	2.0	2.1	2.6	1.5	0.3	0.2	0.6	[3]	1.5	1.7
Shortleaf pine	2.1	1.7	2.4	0.7	2.6	1.2	-	-	0.1	-	2.2	0.9
Pond pine	0.5	1.3	2.3	0.4	1.3	1.1	0.9	-	0.3	0.1	1.0	0.4
Cypress	0.1	0.9	1.6	3.0	6.1	1.4	-	-	-	-	4.2	1.6
Lowland hdwds.	0.1	4.1	0.2	5.9	[3]	5.5	0.4	0.4	[3]	[3]	0.1	4.6
Upland hdwds.	-	0.9	0.4	1.9	[3]	3.5	0.2	0.6	-	-	0.2	1.4
Scrub oak	-	-	-	-	-	1.7	0.6	0.3	0.2	-	0.6	0.3
All types	0.3	3.0	1.7	3.1	2.2	2.1	0.5	0.3	0.3	[3]	1.2	1.9

CULL TREES (in standard cords)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S	H	S	H	S	H	S	H	S	H	S	H
Longleaf pine	-	0.2	0.1	0.1	[3]	0.1	-	0.2	-	0.2	[3]	0.1
Loblolly pine	[3]	0.7	0.1	0.8	[3]	0.8	[3]	0.2	[3]	[3]	[3]	0.6
Shortleaf pine	-	0.2	-	0.6	-	0.9	-	-	-	0.3	-	0.6
Pond pine	-	1.5	[3]	0.1	[3]	0.6	-	-	-	0.1	[3]	0.3
Cypress	-	0.5	[3]	1.3	0.3	0.3	-	-	-	-	0.2	0.5
Lowland hdwds.	[3]	1.4	[3]	1.5	-	1.4	-	1.2	-	[3]	[3]	1.3
Upland hdwds.	-	-	-	1.8	-	0.9	-	0.3	-	-	-	0.6
Scrub oak	-	-	-	-	-	3.0	-	0.3	-	0.7	-	0.4
All types	[3]	1.0	[3]	0.9	[3]	0.7	[3]	0.4	[3]	0.1	[3]	0.7

[1] Sound wood and bark.

[2] S - Softwoods, H - Hardwoods.

[3] Less than 0.05 cords per acre.

Table 15a. - Net annual growth[1] of saw timber[2] in the Southern Coastal Plain by stand size and species group, 1946

(in thousand board feet)

Stand size	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	All species
Large saw timber	52,900	29,600	15,200	97,700
Small saw timber	136,700	80,400	25,100	242,200
Pole timber	26,600	7,900	6,100	40,600
Other stand sizes	16,200	800	2,000	19,000
All stands	232,400	118,700	48,400	399,500

1/ Log scale, International 1/4-inch rule, on sound-tree growing stock.

2/ Includes hardwoods 11.0 to 12.9 inches d.b.h.

Table 16a. - Net annual growth[1] of timber in the Southern Coastal Plain by stand size and species group, 1946

ON SAW-TIMBER TREES (in standard cords)

Stand size	Softwoods		Gums, soft maple and yellow-poplar	Other hardwoods	All species
	Yellow pine	Other			
Large saw timber	113,400	6,400	79,500	43,200	242,500
Small saw timber	379,700	11,200	224,700	77,400	693,000
Pole timber	140,300	10,300	32,700	38,500	221,800
Other stand sizes	83,300	400	3,000	8,700	95,400
All stands	716,700	28,300	339,900	167,800	1,252,700
ON POLE TIMBER TREES (in standard cords)					
Large saw timber	- 100	- 400	- 3,200	2,600	- 1,100
Small saw timber	- 4,200	1,500	- 15,400	16,300	- 1,800
Pole timber	22,400	15,800	9,900	21,900	70,000
Other stand sizes	10,700	3/	3/	4,200	14,900
All stands	28,800	16,900	- 8,700	45,000	82,000
Saw-timber and pole timber trees[2]	745,500	45,200	331,200	212,800	1,334,700

1/ Sound wood and bark.

2/ Excluding cull trees.

3/ Less than 50 cords.

Table 17a. - Average net growth[1] of saw timber per acre in the Southern Coastal Plain by forest type and stand size, 1947

(in board feet)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Other stand sizes	All stands
Longleaf pine	301	301	117	29	165
Loblolly pine	359	285	70	16	187
Shortleaf pine	292	254	56	5	186
Pond pine	317	243	76	21	99
Cypress	193	323	38	-	121
Lowland hardwoods	309	274	69	33	198
Upland hardwoods	106	81	35	24	33
All types	326	278	75	25	149

[1] Log scale, International 1/4-inch rule, on sound-tree growing stock. Applies only to stands in which there was no cutting during 1947.

Table 18a. - Average net growth[1] of timber per acre in the Southern Coastal Plain by forest type and stand size, 1947

(in cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Other stand sizes	All stands
Longleaf pine	0.8	0.9	0.5	0.2	0.6
Loblolly pine	1.0	0.9	0.6	0.1	0.7
Shortleaf pine	0.9	0.8	0.7	[2]	0.7
Pond pine	0.7	0.6	0.4	0.1	0.3
Cypress	0.4	0.6	0.5	-	0.5
Lowland hardwoods	0.8	0.8	0.4	0.1	0.6
Upland hardwoods	0.2	0.2	0.3	0.1	0.2
All types	0.9	0.8	0.5	0.1	0.5

[1] Sound wood and bark, on the entire sound-tree growing stock, excluding cull trees. Applies to stands in which there was no cutting during 1947.

[2] Less than 0.05 cords per acre.

Table 19a. - Commodity drain[1] from saw timber in the Southern Coastal Plain by commodity and species group, 1946

SOUND TREES

Commodity	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	All species	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Lumber	218,920	75,898	11,447	306,265	66.5
Veneer bolts	5,354	44,279	767	50,400	11.0
Cooperage bolts	-	-	1,258	1,258	0.3
Pulpwood bolts	72,958	5,531	-	78,489	17.0
Poles	8,351	-	-	8,351	1.8
Piling	1,253	-	-	1,253	0.3
Posts	164	6	4	174	[3]
Mine timbers	291	-	-	291	0.1
Crossties (hewn)	2,860	1,882	336	5,078	1.1
Shingles	-	-	-	-	-
Fuelwood	2,793	209	2,121	5,123	1.1
Other products[2]	27	3,707	144	3,878	0.8
All commodities	312,971	131,512	16,077	460,560	100.0

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[1] Log scale, International 1/4-inch rule.

[2] Handles, shuttle blocks, hardwood dimension, and miscellaneous farm use.

[3] Less than 0.05 percent.

Table 20a. - Commodity drain[1] from timber in the Southern Coastal Plain by commodity and species group, 1946

SOUND TREES

Commodity	Softwoods		Gums, soft maple and yellow-poplar	Other hardwoods	All species	
	Yellow pine	Other				
	Standard cords	Standard cords	Standard cords	Standard cords	Standard cords	Percent
Lumber	506,300	21,600	184,400	27,800	740,100	54.0
Veneer bolts	14,800	-	101,800	1,800	118,400	8.6
Cooperage bolts	-	-	-	3,600	3,600	0.3
Pulpwood bolts	280,600	-	30,700	-	311,300	22.7
Poles	22,900	-	-	-	22,900	1.7
Piling	3,400	-	-	-	3,400	0.2
Posts	1,600	6,700	3,300	2,800	14,400	1.1
Mine timbers	1,600	-	-	-	1,600	0.1
Crossties (hewn)	6,200	-	5,800	1,000	13,000	1.0
Shingles	-	-	-	-	-	-
Fuelwood	35,000	-	16,200	73,100	124,300	9.1
Other products[2]	6,300	-	8,200	2,600	17,100	1.2
All commodities	878,700	28,300	350,400	112,700	1,370,100	100.0

CULL TREES

All commodities	35,000	-	16,200	73,100	124,300	-

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[1] Sound wood and bark.

[2] Handles, shuttle blocks, hardwood dimension, and miscellaneous farm use.

Table 21a. Net change[1] in saw-timber growing stock[2] in the Southern Coastal Plain by species group, 1946

SOUND TREES

Item	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	Total
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.
Growing stock, Jan. 1, 1946	4,612,700	2,356,600	967,800	7,937,100
Net growth	232,400	118,700	48,400	399,500
Commodity drain	313,000	131,500	16,100	460,600
Net change	- 80,600	- 12,800	+ 32,300	- 61,100
Growing stock, Jan. 1, 1947	4,532,100	2,343,800	1,000,100	7,876,000
Percent change	- 1.7	- 0.5	+ 3.3	- 0.8

1/ Log scale, International 1/4-inch rule.

2/ Includes hardwoods 11.0 to 12.9 inches d.b.h.

Table 22a. - Net change in growing stock of all timber[1] in the Southern Coastal Plain by species group, 1946

ALL TIMBER (in standard cords)

Item	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	Total
Growing stock, Jan. 1, 1946	15,630,200	9,766,900	4,564,700	29,961,800
Net growth:				
On trees 5.0" and larger, Jan. 1, 1946	738,500	293,400	179,000	1,210,900
Trees recruiting to 5.0" in 1946	52,200	37,800	33,800	123,800
Total	790,700	331,200	212,800	1,334,700
Commodity drain	907,000	350,400	112,700	1,370,100
Net change	- 116,300	- 19,200	+ 100,100	- 35,400
Growing stock, Jan. 1, 1947	15,513,900	9,747,700	4,664,800	29,926,400
Percent change	- 0.7	- 0.2	+ 2.2	- 0.1

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[1] The entire sound-tree growing stock, excluding cull trees.

Table 1b. - Gross area[1] of the Northern Coastal Plain by broad use class, 1947

Class of use	Area	
	Acres	Percent
Forest:		
Commercial	4,854,500	62.7
Withdrawn	18,600	0.3
Non-productive	1,700	[2]
Total forest	4,874,800	63.0
Non-forest:		
Idle	368,000	4.7
Agriculture	1,718,200	22.2
Marsh	236,500	3.1
Dune and beach	17,000	0.2
Urban and other[3]	210,200	2.7
Total non-forest	2,549,900	32.9
Total land	7,424,700	95.9
Total water	314,200	4.1
All classes	7,738,900	100.0

[1] From U. S. Bureau of the Census, 1940.

[2] Less than 0.05 percent.

[3] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

Table 2b. - Ownership of land in the Northern Coastal Plain, 1947

Class of ownership	All land		Commercial forest land	
	Acres	Percent	Acres	Percent
Public:				
National forest	245,400	3.3	245,200	5.0
Indian	-	-	-	-
Other federal	216,900	2.9	138,500	2.9
Total federal	462,300	6.2	383,700	7.9
State	334,100[1]	4.5	132,500[2]	2.7
County and municipal	10,100	0.2	4,600	0.1
Total public	806,500	10.9	520,800	10.7
Private	6,618,200	89.1	4,333,700	89.3
All classes	7,424,700	100.0	4,854,500	100.0

1/ Includes 120,800 acres under long-term lease from the Federal Government.

2/ Includes 105,000 acres under long-term lease from the Federal Government.

Table 3b. - Ownership of all private properties of 1,000 acres or more in the Northern Coastal Plain, 1946[1]

Class of ownership	Distribution of all land[2]	
	Acres	Percent
Corporate:		
Pulp company	386,900	19.5
Lumber company	385,400	19.4
Other forest industry	58,600	2.9
Bank, loan, and insurance	30,300	1.5
Railroad	-	-
Other	111,100	5.6
Total corporate	972,300	48.9
Individual:		
Estate, club, preserve	167,300	8.4
Farmer	394,100	19.8
Lumberman	143,500	7.2
Other forest industry	4,500	0.2
Other individual	296,200	14.9
Total individual	1,005,600	50.5
Unknown	11,300	0.6
All classes	1,989,200	100.0

[1] Data taken from county tax rolls, as of January 1, 1946.

[2] Includes forest and non-forest land on properties 1,000 acres and larger in size.

Table 4b. - Commercial forest area of the Northern Coastal Plain by forest type and stand size, 1947[1]

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	28,600	165,200	154,400	130,200	71,000	549,400
Loblolly pine	310,100	713,100	181,200	463,000	78,800	1,746,200
Shortleaf pine	4,400	41,600	49,500	27,100	14,600	137,200
Pond pine	13,700	141,000	44,200	63,000	10,300	272,200
Cypress	38,900	90,000	-	17,200	-	146,100
Lowland hdwds.	337,600	623,300	171,700	468,600	75,000	1,676,200
Upland hdwds.	1,700	8,400	17,200	86,200	5,500	119,000
Scrub oak	-	-	-	208,200	-	208,200
All types	735,000	1,782,600	618,200	1,463,500	255,200	4,854,500
Percent	15.1	36.7	12.7	30.2	5.3	100.0

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[1] See description of forest types and stand-size classes in the appendix.

Table 5b. - Net volume[1] of saw timber in the Northern Coastal Plain by species and stand size, 1947

SOUND TREES (in thousand board feet)

Species [2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	**All stands**
Softwoods:						
Longleaf pine	188,700	701,200	128,400	109,200	43,300	1,170,800
Loblolly pine	2,465,800	2,851,800	177,300	223,900	14,100	5,732,900
Shortleaf pine	47,300	177,000	49,100	8,300	-	281,700
Other pines	167,300	569,600	36,300	32,200	-	805,400
Total	2,869,100	4,299,600	391,100	373,600	57,400	7,990,800
Cypress	383,500	455,400	15,400	13,900	-	868,200
Cedar	-	800	-	-	-	800
Total sftwds.	3,252,600	4,755,800	406,500	387,500	57,400	8,859,800
Hardwoods:						
Tupelo	713,600	1,438,400	80,700	42,900	3,600	2,279,200
Sweetgum	746,700	561,700	12,500	20,700	800	1,342,400
Soft maple	160,000	277,700	17,900	200	-	455,800
Yellow-poplar	105,800	277,500	9,600	14,900	-	407,800
Other soft hdwds.	38,600	43,000	-	-	17,100	98,700
Total	1,764,700	2,598,300	120,700	78,700	21,500	4,583,900
Red oaks	517,700	315,400	49,900	21,300	1,400	905,700
White oaks	90,600	105,900	800	19,300	1,500	218,100
Hickory	107,800	85,700	7,000	11,600	-	212,100
Ash	145,700	100,200	22,800	-	-	268,700
Sycamore, birch	141,000	99,400	1,800	2,900	-	245,100
Total	1,002,800	706,600	82,300	55,100	2,900	1,849,700
Total hdwds.	2,767,500	3,304,900	203,000	133,800	24,400	6,433,600
All sound trees	6,020,100	8,060,700	609,500	521,300	81,800	15,293,400
Percent	39.4	52.7	4.0	3.4	0.5	100.0

1/ Log scale, International 1/4-inch rule.

2/ See appendix for species combined with others.

Table 6b. - Net volume[1] of saw timber in the Northern Coastal Plain by species and diameter class, 1947

SOUND TREES

Species	10-12 inches[2]	14-18 inches	20-24 inches	26 + inches	All diameters	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Softwoods:						
Longleaf pine	567,600	548,400	54,800	-	1,170,800	7.6
Loblolly pine	1,466,900	2,996,900	913,000	356,100	5,732,900	37.5
Shortleaf pine	154,800	117,200	9,700	-	281,700	1.8
Other pines	278,400	482,800	44,200	-	805,400	5.3
Total	2,467,700	4,145,300	1,021,700	356,100	7,990,800	52.2
Cypress	296,300	344,500	92,900	134,500	868,200	5.7
Cedar	800	-	-	-	800	[3]
Total sftwds.	2,764,800	4,489,800	1,114,600	490,600	8,859,800	57.9
Hardwoods:						
Tupelo	513,700	1,310,700	328,100	126,700	2,279,200	14.9
Sweetgum	196,800	674,300	257,600	213,700	1,342,400	8.8
Soft maple	89,600	276,200	58,200	31,800	455,800	3.0
Yellow-poplar	46,900	281,600	66,700	12,600	407,800	2.7
Other soft hdwds.	16,000	50,400	32,300	-	98,700	0.6
Total	863,000	2,593,200	742,900	384,800	4,583,900	30.0
Red oaks	102,900	320,400	277,700	204,700	905,700	5.9
White oaks	42,000	90,600	37,000	48,500	218,100	1.4
Hickory	32,800	94,100	51,600	33,600	212,100	1.4
Ash	38,400	102,000	72,700	55,600	268,700	1.8
Sycamore, birch	32,800	151,600	43,700	17,000	245,100	1.6
Total	248,900	758,700	482,700	359,400	1,849,700	12.1
Total hdwds.	1,111,900	3,351,900	1,225,600	744,200	6,433,600	42.1
All sound trees	3,876,700	7,841,700	2,340,200	1,234,800	15,293,400	100.0
Percent	25.3	51.3	15.3	8.1	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods not included.

[3] Less than 0.05 percent.

Table 7b. - Net volume[1] of saw timber in the Northern Coastal Plain by forest type and stand size, 1947

SOUND TREES (in thousand board feet)

Forest type[2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	163,400	737,100	139,700	10,400	43,600	1,094,200
Loblolly pine	2,795,400	2,919,800	161,200	185,400	8,000	6,069,800
Shortleaf pine	28,700	193,300	43,500	4,500	-	270,000
Pond pine	133,700	534,900	23,600	11,200	11,500	714,900
Cypress	458,900	637,000	-	2,600	-	1,098,500
Lowland hdwds.	2,427,200	3,012,300	231,400	242,100	17,100	5,930,100
Upland hdwds.	12,800	26,300	10,100	37,100	1,600	87,900
Scrub oak	-	-	-	28,000	-	28,000
All types	6,020,100	8,060,700	609,500	521,300	81,800	15,293,400
Percent	39.4	52.7	4.0	3.4	0.5	100.0

[1] Log scale, International 1/4-inch rule.

[2] See description of forest types and stand-size classes in the appendix.

Table 8b. - Net volume[1] of all trees in the Northern Coastal Plain by species and stand size, 1947

SOUND TREES (in thousand cords)

Species	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	501	2,418	971	449	118	4,457
Loblolly pine	6,159	8,793	1,124	937	54	17,067
Shortleaf pine	139	660	349	33	2	1,183
Other pines	420	1,789	365	143	38	2,755
Total	7,219	13,660	2,809	1,562	212	25,462
Cypress	1,025	1,891	78	85	-	3,079
Cedar	-	9	3	-	-	12
Total sftwds.	8,244	15,560	2,890	1,647	212	28,553
Hardwoods:						
Tupelo	2,320	6,389	851	178	15	9,753
Sweetgum	2,222	2,429	301	178	8	5,138
Soft maple	614	1,456	182	10	-	2,262
Yellow-poplar	296	951	95	60	-	1,402
Other soft hdwds.	133	213	25	10	40	421
Total	5,585	11,438	1,454	436	63	18,976
Red oaks	1,574	1,160	307	163	5	3,209
White oaks	314	551	132	174	11	1,182
Hickory	322	331	102	32	49	836
Ash	562	499	129	17	-	1,207
Sycamore, birch	535	439	147	11	25	1,157
Holly, dogwood	123	156	8	8	-	295
Total	3,430	3,136	825	405	90	7,886
Total hdwds.	9,015	14,574	2,279	841	153	26,862
All sound trees	17,259	30,134	5,169	2,488	365	55,415
Percent	31.1	54.4	9.3	4.5	0.7	100.0

CULL TREES (in thousand cords)

Softwoods	136	370	243	104	179	1,032
Hardwoods	4,741	7,193	1,355	1,745	104	15,138
All cull trees	4,877	7,563	1,598	1,849	283	16,170

1/ Sound wood and bark.

Table 9b. - Net volume[1] of all trees in the Northern Coastal Plain by species and diameter class, 1947

SOUND TREES (in thousand cords)

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20 + inches	
Softwoods:							
Longleaf pine	421	871	853	824	1,360	128	4,457
Loblolly pine	825	1,613	1,851	2,520	7,378	2,880	17,067
Shortleaf pine	127	283	209	249	292	23	1,183
Other pines	272	356	409	423	1,193	102	2,755
Total	1,645	3,123	3,322	4,016	10,223	3,133	25,462
Cypress	261	481	399	517	878	543	3,079
Cedar	5	5	-	2	-	-	12
Total softwoods	1,911	3,609	3,721	4,535	11,101	3,676	28,553
Hardwoods:							
Tupelo	751	1,298	1,760	1,437	3,358	1,149	9,753
Sweetgum	482	561	587	594	1,799	1,115	5,138
Soft maple	191	420	492	249	695	215	2,262
Yellow-poplar	112	85	120	142	751	192	1,402
Other soft hdwds.	68	33	70	45	127	78	421
Total	1,604	2,397	3,029	2,467	6,730	2,749	18,976
Red oaks	353	317	309	283	795	1,152	3,209
White oaks	223	226	181	115	225	212	1,182
Hickory	121	74	111	93	234	203	836
Ash	184	182	145	118	270	308	1,207
Sycamore, birch	237	152	159	89	374	146	1,157
Holly, dogwood	68	75	66	40	41	5	295
Total	1,186	1,026	971	738	1,939	2,026	7,886
Total hardwoods	2,790	3,423	4,000	3,205	8,669	4,775	26,862
All sound trees	4,701	7,032	7,721	7,740	19,770	8,451	55,415
Percent	8.5	12.7	13.9	14.0	35.7	15.2	100.0

CULL TREES (in thousand cords)

Softwoods	52	92	197	157	290	244	1,032
Hardwoods	1,059	1,473	1,401	2,195	4,636	4,374	15,138
All cull trees	1,111	1,565	1,598	2,352	4,926	4,618	16,170

[1] Sound wood and bark.

Table 10b. - Net volume[1] of all trees in the Northern Coastal Plain by species and class of material, 1947

Species	Saw-timber trees		Pole timber trees	Total sound-tree volume		Total cull-tree volume
	Sawlogs	Upper stems				
	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Percent	Thousand cords
Softwoods:						
Longleaf pine	2,326	839	1,292	4,457	8.0	60
Loblolly pine	10,983	3,646	2,438	17,067	30.8	367
Shortleaf pine	570	203	410	1,183	2.1	88
Other pines	1,576	551	628	2,755	5.0	201
Total	15,455	5,239	4,768	25,462	45.9	716
Cypress	1,876	461	742	3,079	5.6	316
Cedar	2	-	10	12	[2]	-
Total sftwds.	17,333	5,700	5,520	28,553	51.5	1,032
Hardwoods:						
Tupelo	4,287	1,657	3,809	9,753	17.6	5,953
Sweetgum	2,572	936	1,630	5,138	9.3	943
Soft maple	832	327	1,103	2,262	4.1	1,868
Yellow-poplar	795	290	317	1,402	2.5	216
Other soft hdwds.	180	70	171	421	0.8	199
Total	8,666	3,280	7,030	18,976	34.3	9,179
Red oaks	1,615	615	979	3,209	5.8	2,587
White oaks	398	154	630	1,182	2.1	1,061
Hickory	382	148	306	836	1.5	358
Ash	513	183	511	1,207	2.2	391
Sycamore, birch	435	174	548	1,157	2.1	586
Holly, dogwood	86	-	209	295	0.5	100
Scrub oaks	-	-	-	-	-	376
Total	3,429	1,274	3,183	7,886	14.2	5,959
Total hdwds.	12,095	4,554	10,213	26,862	48.5	15,138
Total all species	29,428	10,254	15,733	55,415	100.0	16,170
Percent	53.1	18.5	28.4	100.0		

[1] Sound wood and bark.

[2] Less than 0.05 percent.

Table 11b. - Net volume[1/] of all trees in the Northern Coastal Plain by forest type and stand size, 1947

SOUND TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	438	2,574	1,059	103	110	4,284
Loblolly pine	7,795	10,239	1,430	778	55	20,297
Shortleaf pine	102	704	344	43	1	1,194
Pond pine	387	1,728	271	58	65	2,509
Cypress	1,290	2,682	-	44	-	4,016
Lowland hardwoods	7,213	12,084	1,941	1,096	128	22,462
Upland hardwoods	34	123	124	215	6	502
Scrub oak	-	-	-	151	-	151
All types	17,259	30,134	5,169	2,488	365	55,415

CULL TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	26	37	135	311	30	539
Loblolly pine	974	1,363	248	373	155	3,113
Shortleaf pine	8	71	112	2	19	212
Pond pine	55	242	54	42	31	424
Cypress	591	785	-	10	-	1,386
Lowland hardwoods	3,213	4,996	1,010	936	39	10,194
Upland hardwoods	10	69	39	64	9	191
Scrub oak	-	-	-	111	-	111
All types	4,877	7,563	1,598	1,849	283	16,170

[1/] Sound wood and bark.

Table 12b. - Average volume[1] per acre of saw timber in the Northern Coastal Plain by forest type and stand size, 1947

SOUND TREES (in board feet)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S[2]	H[2]	S	H	S	H	S	H	S	H	S	H
Longleaf pine	5,655	63	4,452	10	897	8	80	-	551	63	1,975	17
Loblolly pine	7,938	1,076	3,599	496	774	117	367	33	92	9	3,061	415
Shortleaf pine	6,172	336	3,878	771	834	45	167	-	-	-	1,708	261
Pond pine	9,068	681	3,774	20	532	-	146	32	936	182	2,567	59
Cypress	5,474	6,329	3,866	3,210	-	-	152	-	-	-	3,857	3,662
Lowland hardwoods	783	6,407	660	4,173	318	1,029	280	237	-	229	514	3,024
Upland hardwoods	408	7,210	110	3,012	484	102	386	45	256	50	375	364
Scrub oak	-	-	-	-	-	-	126	8	-	-	126	8
All types	4,426	3,765	2,668	1,854	657	328	265	91	225	96	1,825	1,325

[1] Log scale, International 1/4-inch rule.

[2] S - softwoods, H - hardwoods.

Table 13b. - Average volume[1] per acre of all trees in the Northern Coastal Plain by forest type and stand size, 1947

SOUND TREES (in standard cords)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S[2]	H[2]	S	H	S	H	S	H	S	H	S	H
Longleaf pine	14.6	0.8	15.3	0.2	6.5	0.3	0.7	0.1	1.4	0.2	7.5	0.3
Loblolly pine	20.2	4.9	11.6	2.7	6.4	1.5	1.4	0.2	0.7	[3]	9.4	2.2
Shortleaf pine	15.0	8.0	13.4	3.5	5.5	1.4	1.3	0.3	0.1	-	6.8	1.9
Pond pine	22.7	5.5	11.4	0.8	6.0	0.2	0.8	0.1	5.4	1.0	8.4	0.8
Cypress	13.0	20.2	13.7	16.1	-	-	2.6	-	-	-	12.2	15.3
Lowland hdwds.	2.0	19.4	2.2	17.2	0.9	10.4	1.1	1.3	-	1.7	1.6	11.8
Upland hdwds.	1.2	19.2	0.5	14.1	1.5	5.8	1.4	1.1	0.9	0.2	1.3	2.9
Scrub oak	-	-	-	-	-	-	0.7	[3]	-	-	0.7	[3]
All types	11.2	12.3	8.7	8.2	4.7	3.7	1.1	0.6	0.8	0.6	5.9	5.5
CULL TREES (in standard cords)												
Longleaf pine	0.1	0.9	0.1	0.1	0.1	0.8	[3]	2.4	-	0.4	0.1	0.9
Loblolly pine	0.2	2.9	0.1	0.8	0.5	0.9	[3]	0.8	1.9	0.1	0.2	1.5
Shortleaf pine	-	1.7	-	1.7	1.4	0.8	[3]	[3]	0.7	0.5	0.6	0.9
Pond pine	0.4	3.7	0.6	1.1	0.3	0.9	0.6	[3]	1.5	1.5	0.6	1.0
Cypress	0.9	14.3	1.6	7.1	-	-	0.6	-	-	-	1.3	8.2
Lowland hdwds.	0.1	9.5	[3]	8.0	0.3	5.6	[3]	2.0	-	0.5	0.1	6.0
Upland hdwds.	-	6.1	-	8.2	0.3	1.9	[3]	0.7	0.9	0.8	0.1	1.5
Scrub oak	-	-	-	-	-	-	[3]	0.5	-	-	[3]	0.5
All types	0.2	6.5	0.2	4.0	0.4	2.2	0.1	1.2	0.7	0.4	0.2	3.1

[1] Sound wood and bark.

[2] S - Softwoods, H - Hardwoods.

[3] Less than 0.05 cords per acre.

Table 14b. - Average volume[1] per acre of pole-timber trees in the Northern Coastal Plain by forest type and stand size, 1947

SOUND TREES (in standard cords)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S[2]	H[2]	S	H	S	H	S	H	S	H	S	H
Longleaf pine	0.7	1.2	3.3	0.1	4.0	0.3	0.3	-	0.2	[3]	2.2	0.2
Loblolly pine	0.7	2.2	1.9	1.6	4.2	1.2	0.5	0.2	0.4	[3]	1.5	1.2
Shortleaf pine	0.4	6.2	2.7	1.5	3.2	1.3	0.7	0.4	0.1	-	2.1	1.2
Pond pine	[3]	4.0	1.4	0.6	4.4	0.1	0.5	-	2.3	0.4	1.7	0.6
Cypress	0.4	4.0	4.7	5.9	-	-	2.2	-	-	-	3.2	4.7
Lowland hdwds.	0.1	3.2	0.3	6.4	0.2	7.7	0.3	0.6	-	1.1	0.2	4.0
Upland hdwds.	-	1.2	0.1	5.7	0.2	5.5	0.3	1.0	0.4	0.2	0.3	1.9
Scrub oak	-	-	-	-	-	-	0.4	-	-	-	0.4	-
All types	0.4	2.8	1.6	3.3	2.8	2.8	0.4	0.3	0.3	0.4	1.1	2.1
CULL TREES (in standard cords)												
Longleaf pine	[3]	0.7	[3]	[3]	[3]	0.4	[3]	0.2	-	0.3	[3]	0.3
Loblolly pine	[3]	0.7	[3]	0.8	0.1	0.4	[3]	0.4	0.1	[3]	[3]	0.6
Shortleaf pine	-	1.4	-	0.8	0.3	0.3	[3]	[3]	0.5	0.4	0.2	0.4
Pond pine	-	0.9	0.1	0.4	0.2	0.2	0.1	-	-	0.6	0.1	0.3
Cypress	0.1	1.5	0.2	1.4	-	-	0.6	-	-	-	0.2	1.3
Lowland hdwds.	-	1.7	[3]	1.8	-	2.3	[3]	0.4	-	0.2	[3]	1.4
Upland hdwds.	-	-	-	1.8	[3]	1.1	-	0.4	-	0.2	[3]	0.6
Scrub oak	-	-	-	-	-	-	[3]	0.4	-	-	[3]	0.4
All types	[3]	1.2	[3]	1.1	0.1	0.9	[3]	0.3	0.1	0.2	[3]	0.8

[1] Sound wood and bark.

[2] S - Softwoods, H - Hardwoods.

[3] Less than 0.05 cords per acre.

Table 15b. - Net annual growth[1] of saw timber[2] in the Northern Coastal Plain by stand size and species group, 1946

(in thousand board feet)

Stand size	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	All species
Large saw timber	118,400	49,400	32,800	200,600
Small saw timber	277,600	121,900	34,800	434,300
Pole timber	26,700	5,300	3,600	35,600
Other stand sizes	31,100	4,400	2,500	38,000
All stands	453,800	181,000	73,700	708,500

1/ Log scale, International 1/4-inch rule, on sound-tree growing stock.

2/ Includes hardwoods 11.0 to 12.9 inches d.b.h.

Table 16b. - Net annual growth[1] of timber in the Northern Coastal Plain by stand size and species group, 1946

ON SAW-TIMBER TREES (in standard cords)

Stand size	Softwoods		Gums, soft maple and yellow-poplar	Other hardwoods	All species
	Yellow pine	Other			
Large saw timber	263,200	15,800	133,600	90,000	502,600
Small saw timber	702,800	38,400	330,600	105,700	1,177,500
Pole timber	207,300	2,300	32,900	14,000	256,500
Other stand sizes	118,600	500	9,700	5,700	134,500
All stands	1,291,900	57,000	506,800	215,400	2,071,100

ON POLE TIMBER TREES (in standard cords)

Stand size	Yellow pine	Other	Gums, soft maple and yellow-poplar	Other hardwoods	All species
Large saw timber	- 5,100	- 100	2,600	14,400	11,800
Small saw timber	3,500	10,700	- 2,600	22,000	33,600
Pole timber	43,100	200	22,000	30,300	95,600
Other stand sizes	6,300	800	6,800	33,400	47,300
All stands	47,800	11,600	28,800	100,100	188,300
Saw-timber and pole timber trees[2]	1,339,700	68,600	535,600	315,500	2,259,400

[1] Sound wood and bark.

[2] Excluding cull trees.

Table 17b. - Average net growth[1] of saw timber per acre in the Northern Coastal Plain by forest type and stand size, 1947

(in board feet)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Other stand sizes	All stands
Longleaf pine	178	286	111	14	131
Loblolly pine	393	278	74	27	199
Shortleaf pine	212	198	100	10	106
Pond pine	391	238	48	16	155
Cypress	371	334	-	5	305
Lowland hardwoods	229	256	45	21	153
Upland hardwoods	234	128	17	23	32
All types	307	268	74	20	161

[1] Log scale, International 1/4-inch rule, on sound-tree growing stock. Applies only to stands in which there was no cutting during 1947.

Table 18b. - Average net growth[1] of timber per acre in the Northern Coastal Plain by forest type and stand size, 1947

(in cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Other stand sizes	All stands
Longleaf pine	0.5	0.9	0.8	0.1	0.5
Loblolly pine	1.1	0.9	0.6	0.1	0.6
Shortleaf pine	1.3	0.6	0.8	0.1	0.5
Pond pine	1.1	0.7	0.7	0.1	0.6
Cypress	0.9	0.9	--	0.1	0.8
Lowland hardwoods	0.6	0.7	0.6	0.1	0.5
Upland hardwoods	0.4	0.6	0.3	0.2	0.2
All types	0.8	0.8	0.7	0.1	0.5

1/ Sound wood and bark, on the entire sound-tree growing stock, excluding cull trees. Applies only to stands in which there was no cutting during 1947.

Table 19b. - Commodity drain[1] from saw timber in the Northern Coastal Plain by commodity and species group, 1946

SOUND TREES

Commodity	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	All species	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Lumber	309,137	76,573	22,752	408,462	63.7
Veneer bolts	13,072	72,641	2,090	87,803	13.7
Cooperage bolts	-	-	1,145	1,145	0.2
Pulpwood bolts	81,890	7,628	-	89,518	13.9
Poles	13,448	-	-	13,448	2.1
Piling	2,018	-	-	2,018	0.3
Posts	154	39	314	507	0.1
Mine timbers	304	-	-	304	[3]
Crossties (hewn)	3,102	1,869	195	5,166	0.8
Shingles	70	-	-	70	[3]
Fuelwood	23,104	1,912	3,702	28,718	4.5
Other products[2]	575	3,596	257	4,428	0.7
All commodities	446,874	164,258	30,455	641,587	100.0

[1] Log scale, International 1/4-inch rule.

[2] Handles, shuttle blocks, hardwood dimension, and miscellaneous farm use.

[3] Less than 0.05 percent.

Table 20b. - Commodity drain[1] from timber in the Northern Coastal Plain by commodity and species group, 1946

SOUND TREES

Commodity	Softwoods		Gums, soft maple and yellow-poplar	Other hardwoods	All species	
	Yellow pine	Other				
	Standard cords	Standard cords	Standard cords	Standard cords	Standard cords	Percent
Lumber	612,900	132,600	186,000	55,300	986,800	45.2
Veneer bolts	35,900	-	167,100	4,800	207,800	9.5
Cooperage bolts	-	-	-	3,200	3,200	0.1
Pulpwood bolts	315,000	-	42,400	-	357,400	16.4
Poles	36,900	-	-	-	36,900	1.7
Piling	5,500	-	-	-	5,500	0.3
Posts	3,800	2,000	7,600	5,500	18,900	0.9
Mine timbers	1,700	-	-	-	1,700	0.1
Crossties (hewn)	6,700	-	5,700	700	13,100	0.6
Shingles	200	-	-	-	200	[3]
Fuelwood	151,400	-	146,700	207,500	505,600	23.2
Other products[2]	19,100	1,000	18,100	5,800	44,000	2.0
All commodities	1,189,100	135,600	573,600	282,800	2,181,100	100.0

CULL TREES

All commodities	75,100	-	72,600	102,700	250,400	-

[1] Sound wood and bark.

[2] Handle bolts, shuttle blocks, hardwood dimension, and miscellaneous farm use.

[3] Less than 0.05 percent.

Table 21b. Net change[1] in saw-timber growing stock[2] in the Northern Coastal Plain by species group, 1946

SOUND TREES

Item	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	Total
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.
Growing stock, Jan. 1, 1946	8,852,900	4,567,100	1,806,500	15,226,500
Net growth	453,800	181,000	73,700	708,500
Commodity drain	446,900	164,200	30,500	641,600
Net change	+ 6,900	+ 16,800	+ 43,200	+ 66,900
Growing stock, Jan. 1, 1947	8,859,800	4,583,900	1,849,700	15,293,400
Percent change	+ 0.1	+ 0.4	+ 2.4	+ 0.4

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[1] Log scale, International 1/4-inch rule.

[2] Includes hardwoods 11.0 to 12.9 inches d.b.h.

Table 22b. - Net change in growing stock of all timber[1/] in the Northern Coastal Plain by species group, 1946

ALL TIMBER (in standard cords)

Item	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	Total
Growing stock, Jan. 1, 1946	28,469,700	19,013,700	7,852,800	55,336,200
Net growth:				
On trees 5.0" and larger, Jan. 1, 1946	1,325,200	464,900	275,100	2,065,200
Trees recruiting to 5.0" in 1946	83,100	70,700	40,400	194,200
Total	1,408,300	535,600	315,500	2,259,400
Commodity drain	1,324,700	573,600	282,800	2,181,100
Net change	+ 83,600	- 38,000	+ 32,700	+ 78,300
Growing stock, Jan. 1, 1947	28,553,300	18,975,700	7,885,500	55,414,500
Percent change	+ 0.3	- 0.2	+ 0.4	+ 0.1

1/ The entire sound-tree growing stock, excluding cull trees.

Table 1c. - Gross area[1] of the Piedmont by broad use class, 1947

Class of use	Area	
	Acres	Percent
Forest:		
Commercial	4,018,700	59.0
Withdrawn	16,300	0.2
Non-productive	600	[2]
Total forest	4,035,600	59.2
Non-forest		
Idle	635,400	9.3
Agriculture	1,896,600	27.8
Marsh	-	-
Dune and beach	-	-
Urban and other[3]	176,100	2.6
Total non-forest	2,708,100	39.7
Total land	6.743,700	98.9
Total water	74,200	1.1
All classes	6,817,900	100.0

[1] From U. S. Bureau of the Census, 1940.

[2] Less than 0.05 percent.

[3] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

Table 2c. - Ownership of land in the Piedmont, 1947

Class of ownership	All land		Commercial forest land	
	Acres	Percent	Acres	Percent
Public:				
National forest	336,300	5.0	270,800	6.7
Indian	4,300	0.1	2,600	0.1
Other federal	29,200	0.4	600	1/
Total federal	369,800	5.5	274,000	6.8
State	42,100 2/	0.6	18,800 3/	0.5
County and municipal	37,600	0.6	14,300	0.3
Total public	449,500	6.7	307,100	7.6
Private	6,294,200	93.3	3,711,600	92.4
All classes	6,743,700	100.0	4,018,700	100.0

1/ Less than 0.05 percent.

2/ Includes 27,300 acres under long-term lease from the Federal Government.

3/ Includes 17,800 acres under long-term lease from the Federal Government.

Table 3c. - Ownership of all private properties of 1,000 acres or more in the Piedmont, 1946[1]

Class of ownership	Distribution of all land[2]	
	Acres	Percent
Corporate:		
Pulp company	67,400	8.8
Lumber company	125,200	16.4
Other forest industry	-	-
Bank, loan, and insurance	6,300	0.8
Railroad	-	-
Other	178,600	23.4
Total corporate	377,500	49.4
Individual:		
Estate, club, preserve	-	-
Farmer	240,100	31.4
Lumberman	82,500	10.8
Other forest industry	-	-
Other individual	63,900	8.4
Total individual	386,500	50.6
Unknown	-	-
All classes	764,000	100.0

1/ Data taken from county tax rolls, as of January 1, 1946.

2/ Includes forest and non-forest land on properties 1,000 acres and larger in size.

Table 4c. - Commercial forest area of the Piedmont by forest type and stand size, 1947[1]

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	-	-	1,400	-	2,000	3,400
Loblolly pine	30,800	310,000	377,400	256,900	68,700	1,043,800
Shortleaf pine	80,000	487,200	910,000	267,500	200,400	1,945,100
Pond pine	-	-	-	-	-	-
Cypress	-	-	-	-	-	-
Lowland hdwds.	36,600	82,300	171,700	109,800	33,500	433,900
Upland hdwds.	60,300	154,200	300,800	73,600	-	588,900
Scrub oak	-	-	-	3,600	-	3,600
All types	207,700	1,033,700	1,761,300	711,400	304,600	4,018,700
Percent	5.2	25.7	43.8	17.7	7.6	100.0

[1] See description of forest types and stand-size classes in the appendix.

Table 5c. – Net volume1/ of saw timber in the Piedmont by species and stand size, 1947

SOUND TREES (in thousand board feet)

Species2/	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	**All Stands**
Softwoods:						
Longleaf pine	-	-	-	2,300	500	2,800
Loblolly pine	205,200	1,210,000	290,300	85,600	6,900	1,798,000
Shortleaf pine	349,100	1,206,700	562,600	52,700	18,000	2,189,100
Other pines	11,200	84,200	19,500	300	-	115,200
Total	565,500	2,500,900	872,400	140,900	25,400	4,105,100
Hemlock	32,400	400	-	-	-	32,800
Cedar	1,400	12,800	12,500	3,200	-	29,900
Total sftwds.	599,300	2,514,100	884,900	144,100	25,400	4,167,800
Hardwoods:						
Tupelo	4,400	14,000	10,300	1,500	-	30,200
Sweetgum	81,300	159,800	94,800	31,800	3,200	370,900
Soft maple	3,700	14,200	8,400	-	-	26,300
Yellow poplar	168,000	150,700	140,400	16,000	3,800	478,900
Other soft hdwds.	11,800	41,000	9,100	-	-	61,900
Total	269,200	379,700	263,000	49,300	7,000	968,200
Red oaks	79,300	188,000	138,300	24,000	600	430,200
White oaks	130,500	174,800	60,100	1,400	-	366,800
Hickory	60,800	98,300	40,200	3,400	-	202,700
Ash	9,300	10,600	12,300	-	-	32,200
Sycamore, birch	31,800	106,700	35,200	9,400	2,500	185,600
Total	311,700	578,400	286,100	38,200	3,100	1,217,500
Total hdwds.	580,900	958,100	549,100	87,500	10,100	2,185,700
All sound trees	1,180,200	3,472,200	1,434,000	231,600	35,500	6,353,500
Percent	18.6	54.6	22.6	3.6	0.6	100.0

1/ Log scale, International 1/4-inch rule.

2/ See appendix for species combined with others.

Table 6c.- Net volume[1] of saw timber in the Piedmont by species and diameter class, 1947

SOUND TREES

Species	10-12 inches[2]	14-18 inches	20-24 inches	26 + inches	All diameters	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Softwoods:						
Longleaf pine	2,000	800	-	-	2,800	[3]
Loblolly pine	1,014,500	647,000	109,200	27,300	1,798,000	28.3
Shortleaf pine	1,423,100	645,700	120,300	-	2,189,100	34.5
Other pines	66,300	47,000	1,900	-	115,200	1.8
Total	2,505,900	1,340,500	231,400	27,300	4,105,100	64.6
Cypress	-	-	-	-	-	-
Hemlock	1,900	2,000	17,600	11,300	32,800	0.5
Cedar	22,800	7,100	-	-	29,900	0.5
Total sftwds.	2,530,600	1,349,600	249,000	38,600	4,167,800	65.6
Hardwoods:						
Tupelo	11,900	12,900	5,400	-	30,200	0.5
Sweetgum	97,800	230,800	42,300	-	370,900	5.8
Soft maple	15,200	11,100	-	-	26,300	0.4
Yellow-poplar	77,100	254,100	98,300	49,400	478,900	7.5
Other soft hdwds.	17,800	39,000	5,100	-	61,900	1.0
Total	219,800	547,900	151,100	49,400	968,200	15.2
Red oaks	106,900	240,000	64,600	18,700	430,200	6.8
White oaks	78,000	202,500	60,100	26,200	366,800	5.8
Hickory	36,000	119,500	40,300	6,900	202,700	3.2
Ash	18,000	6,900	7,300	-	32,200	0.5
Sycamore, birch	44,900	86,600	39,400	14,700	185,600	2.9
Total	283,800	655,500	211,700	66,500	1,217,500	19.2
Total hdwds.	503,600	1,203,400	362,800	115,900	2,185,700	34.4
All sound trees	3,034,200	2,553,000	611,800	154,500	6,353,500	100.0
Percent	47.8	40.2	9.6	2.4	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods not included.

[3] Less than 0.05 percent.

Table 7c. - Net volume[1] of saw timber in the Piedmont by forest type and stand size, 1947

SOUND TREES (in thousand board feet)

Forest type[2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	-	-	400	-	-	400
Loblolly pine	239,300	1,323,400	311,800	125,700	7,600	2,007,800
Shortleaf pine	534,100	1,520,900	750,000	43,900	18,600	2,867,500
Pond pine	-	-	-	-	-	-
Cypress	-	-	-	-	-	-
Lowland hdwds.	179,000	239,700	136,400	54,100	9,300	618,500
Upland hdwds.	227,800	388,200	235,400	6,400	-	857,800
Scrub oak	-	-	-	1,500	-	1,500
All types	1,180,200	3,472,200	1,434,000	231,600	35,500	6,353,500
Percent	18.6	54.6	22.6	3.6	0.6	100.0

[1] Log scale, International 1/4-inch rule.

[2] See description of forest types and stand-size classes in the appendix.

Table 8c. - Net volume[1] of all trees in the Piedmont by species and stand size, 1947

SOUND TREES (in thousand cords)

Species	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	-	-	3	6	1	10
Loblolly pine	531	4,224	2,967	593	32	8,347
Shortleaf pine	947	5,451	5,289	441	86	12,214
Other pines	28	336	569	8	-	941
Total	1,506	10,011	8,828	1,048	119	21,512
Cypress	-	-	4	-	-	4
Hemlock	77	1	1	-	-	79
Cedar	9	143	136	23	5	316
Total sftwds.	1,592	10,155	8,969	1,071	124	21,911
Hardwoods:						
Tupelo	65	85	110	14	-	274
Sweetgum	329	899	1,306	116	22	2,672
Soft maple	44	140	101	-	-	285
Yellow-poplar	474	585	617	57	16	1,749
Other soft hdwds.	45	146	349	-	-	540
Total	957	1,855	2,483	187	38	5,520
Red oaks	245	775	972	116	6	2,114
White oaks	423	926	843	17	-	2,209
Hickory	212	439	495	21	2	1,169
Ash	44	112	170	-	-	326
Sycamore, birch	131	491	549	125	11	1,307
Holly, dogwood	30	62	87	1	-	180
Total	1,085	2,805	3,116	280	19	7,305
Total hdwds.	2,042	4,660	5,599	467	57	12,825
All sound trees	3,634	14,815	14,568	1,538	181	34,736
Percent	10.5	42.7	41.9	4.4	0.5	100.0

CULL TREES (in thousand cords)

Softwoods	61	398	826	294	42	1,621
Hardwoods	1,034	2,277	2,554	418	96	6,379
All cull trees	1,095	2,675	3,380	712	138	8,000

1/ Sound wood and bark.

Table 9c. - Net volume[1] of all trees in the Piedmont by species and diameter class, 1947

SOUND TREES (in thousand cords)

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20 + inches	
Softwoods:							
Longleaf pine	-	3	5	-	2	-	10
Loblolly pine	1,890	1,728	1,489	1,380	1,567	293	8,347
Shortleaf pine	3,304	3,047	2,412	1,627	1,562	262	12,214
Other pines	346	297	90	91	112	5	941
Total	5,540	5,075	3,996	3,098	3,243	560	21,512
Cypress	-	4	-	-	-	-	4
Hemlock	4	3	2	4	5	61	79
Cedar	174	50	46	26	20	-	316
Total softwoods	5,718	5,132	4,044	3,128	3,268	621	21,911
Hardwoods:							
Tupelo	111	42	42	33	33	13	274
Sweetgum	633	571	478	286	602	102	2,672
Soft maple	51	83	81	41	29	-	285
Yellow-poplar	109	179	222	225	664	350	1,749
Other soft hdwds.	211	68	103	47	98	13	540
Total	1,115	943	926	632	1,426	478	5,520
Red oaks	319	396	328	283	593	195	2,114
White oaks	355	443	490	212	505	204	2,209
Hickory	269	185	210	95	295	115	1,169
Ash	68	111	58	52	18	19	326
Sycamore, birch	285	329	225	122	221	125	1,307
Holly, dogwood	98	52	17	1	12	-	180
Total	1,394	1,516	1,328	765	1,644	658	7,305
Total hardwoods	2,509	2,459	2,254	1,397	3,070	1,136	12,825
All sound trees	8,227	7,591	6,298	4,525	6,338	1,757	34,736
Percent	23.7	21.9	18.1	13.0	18.2	5.1	100.0

CULL TREES (in thousand cords)

Softwoods	312	238	400	275	301	95	1,621
Hardwoods	916	958	707	902	1,808	1,088	6,379
All cull trees	1,228	1,196	1,107	1,177	2,109	1,183	8,000

[1] Sound wood and bark.

Table 10c. - Net volume[1] of all trees in the Piedmont by species and class of material, 1947

Species	Saw-timber trees		Pole timber trees	Total sound-tree volume		Total cull-tree volume
	Sawlogs	Upper stems				
	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Percent	Thousand cords
Softwoods:						
Longleaf pine	5	2	3	10	[2]	-
Loblolly pine	3,433	1,296	3,618	8,347	24.1	508
Shortleaf pine	4,208	1,655	6,351	12,214	35.2	732
Other pines	216	82	643	941	2.7	277
Total	7,862	3,035	10,615	21,512	62.0	1,517
Cypress	-	-	4	4	[2]	-
Hemlock	54	18	7	79	0.2	28
Cedar	73	19	224	316	0.9	76
Total sftwds.	7,989	3,072	10,850	21,911	63.1	1,621
Hardwoods:						
Tupelo	56	23	195	274	0.8	325
Sweetgum	716	274	1,682	2,672	7.7	618
Soft maple	50	20	215	285	0.8	339
Yellow-poplar	898	341	510	1,749	5.0	253
Other soft hdwds.	112	46	382	540	1.6	286
Total	1,832	704	2,984	5,520	15.9	1,821
Red oaks	757	314	1,043	2,114	6.1	1,275
White oaks	657	264	1,288	2,209	6.3	1,291
Hickory	360	145	664	1,169	3.4	446
Ash	64	25	237	326	0.9	239
Sycamore, birch	334	134	839	1,307	3.8	835
Holly, dogwood	13	-	167	180	0.5	117
Scrub oaks	-	-	-	-	-	355
Total	2,185	882	4,238	7,305	21.0	4,558
Total hdwds.	4,017	1,586	7,222	12,825	36.9	6,379
Total all species	12,006	4,658	18,072	34,736	100.0	8,000
Percent	34.6	13.4	52.0	100.0		

[1] Sound wood and bark.

[2] Less than 0.05 percent.

Table 11c. - Net volume[1/] of all trees in the Piedmont by forest type and stand size, 1947

SOUND TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	-	-	15	-	-	15
Loblolly pine	729	5,177	3,650	809	51	10,416
Shortleaf pine	1,583	7,012	7,413	439	100	16,547
Lowland hardwoods	566	1,028	1,635	236	30	3,495
Upland hardwoods	756	1,598	1,855	50	-	4,259
Scrub oak	-	-	-	4	-	4
All types	3,634	14,815	14,568	1,538	181	34,736

CULL TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	-	-	6	-	-	6
Loblolly pine	62	373	486	289	26	1,236
Shortleaf pine	280	1,172	1,354	132	87	3,025
Lowland hardwoods	213	477	634	221	25	1,570
Upland hardwoods	540	653	900	69	-	2,162
Scrub oak	-	-	-	1	-	1
All types	1,095	2,675	3,380	712	138	8,000

[1/] Sound wood and bark.

Table 12c. - Average volume[1] per acre of saw timber in the Piedmont by forest type and stand size, 1947

SOUND TREES (in board feet)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S[2]	H[2]	S	H	S	H	S	H	S	H	S	H
Longleaf pine	-	-	-	-	268	-	-	-	-	-	108	-
Loblolly pine	6,897	872	3,951	318	670	156	377	112	111	-	1,719	204
Shortleaf pine	4,409	2,272	2,540	581	592	232	131	33	84	9	1,121	353
Pond pine	-	-	-	-	-	-	-	-	-	-	-	-
Cypress	-	-	-	-	-	-	-	-	-	-	-	-
Lowland hardwoods	667	4,225	113	2,800	137	657	104	389	31	247	161	1,265
Upland hardwoods	165	3,609	276	2,242	231	552	10	77	-	-	208	1,248
Scrub oak	-	-	-	-	-	-	-	424	-	-	-	424
All types	2,885	2,797	2,432	927	502	312	203	123	83	33	1,037	544

[1] Log scale, International 1/4-inch rule.

[2] S - softwoods, H - hardwoods.

Table 13c. - Average volume[1] per acre of all trees in the Piedmont by forest type and stand size, 1947

SOUND TREES (in standard cords)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S[2]	H[2]	S	H	S	H	S	H	S	H	S	H
Longleaf pine	-	-	-	-	6.2	4.9	-	-	-	-	2.5	2.0
Loblolly pine	18.1	5.6	14.7	2.0	8.1	1.5	2.5	0.6	0.5	0.2	8.5	1.5
Shortleaf pine	11.7	8.1	11.0	3.4	6.0	2.1	1.4	0.3	0.4	0.1	6.3	2.2
Pond pine	-	-	-	-	-	-	-	-	-	-	-	-
Cypress	-	-	-	-	-	-	-	-	-	-	-	-
Lowland hdwds.	1.5	14.0	0.4	12.0	0.3	9.2	0.4	1.7	0.1	0.8	0.5	7.6
Upland hdwds.	0.7	11.8	1.1	9.2	1.1	5.1	0.1	0.5	-	-	0.9	6.3
Scrub oak	-	-	-	-	-	-	-	1.1	-	-	-	1.1
All types	7.7	9.8	9.8	4.5	5.1	3.2	1.5	0.7	0.4	0.2	5.5	3.2

CULL TREES (in standard cords)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S	H	S	H	S	H	S	H	S	H	S	H
Longleaf pine	-	-	-	-	-	4.1	-	-	-	-	-	1.7
Loblolly pine	0.2	1.8	0.4	0.8	0.7	0.6	0.9	0.3	0.2	0.2	0.6	0.6
Shortleaf pine	0.6	2.9	0.5	1.9	0.6	0.9	0.3	0.2	0.1	0.3	0.5	1.1
Pond pine	-	-	-	-	-	-	-	-	-	-	-	-
Cypress	-	-	-	-	-	-	-	-	-	-	-	-
Lowland hdwds.	-	5.8	-	5.8	3/	3.7	-	2.0	3/	0.7	3/	3.6
Upland hdwds.	0.1	8.9	-	4.2	0.1	2.9	0.1	0.9	-	-	0.1	3.6
Scrub oak	-	-	-	-	-	-	-	0.3	-	-	-	0.3
All types	0.3	5.0	0.4	2.2	0.5	1.4	0.4	0.6	0.1	0.3	0.4	1.6

1/ Sound wood and bark.

2/ S - Softwoods, H - Hardwoods.

3/ Less than 0.05 cords per acre.

Table 14c. - Average volume[1] per acre of pole-timber trees in the Piedmont by forest type and stand size, 1947

SOUND TREES (in standard cords)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S[2]	H[2]	S	H	S	H	S	H	S	H	S	H
Longleaf pine	-	-	-	-	5.4	4.9	-	-	-	-	2.2	2.0
Loblolly pine	1.7	3.2	4.2	1.1	6.3	1.1	1.5	0.3	0.2	0.2	4.0	0.9
Shortleaf pine	1.2	2.6	4.2	1.9	4.4	1.5	1.0	0.2	0.2	3/	3.3	1.3
Pond pine	-	-	-	-	-	-	-	-	-	-	-	-
Cypress	-	-	-	-	-	-	-	-	-	-	-	-
Lowland hdwds.	3/	3.3	0.1	4.7	3/	7.5	0.1	0.7	-	0.2	0.1	4.3
Upland hdwds.	0.3	2.9	0.3	3.5	0.4	3.7	0.1	0.3	-	-	0.4	3.1
Scrub oak	-	-	-	-	-	-	-	-	-	-	-	-
All types	0.8	2.9	3.3	2.1	3.7	2.4	1.0	0.3	0.2	0.1	2.7	1.8

CULL TREES (in standard cords)

Forest type	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Seedling & sapling stands		Poorly stocked stands & unstocked areas		All stands	
	S	H	S	H	S	H	S	H	S	H	S	H
Longleaf pine	-	-	-	-	-	3.2	-	-	-	-	-	1.3
Loblolly pine	-	1.2	3/	0.3	0.3	0.3	0.3	0.2	0.1	3/	0.2	0.3
Shortleaf pine	0.1	0.9	0.2	0.7	0.2	0.5	0.1	0.2	3/	3/	0.2	0.5
Pond pine	-	-	-	-	-	-	-	-	-	-	-	-
Cypress	-	-	-	-	-	-	-	-	-	-	-	-
Lowland hdwds.	-	1.9	-	1.9	-	2.0	-	0.7	3/	0.6	3/	1.5
Upland hdwds.	-	1.4	-	1.4	3/	1.3	0.1	0.3	-	-	3/	1.2
Scrub oak	-	-	-	-	-	-	-	-	-	-	-	-
All types	3/	1.3	0.1	0.8	0.2	0.7	0.2	0.3	3/	0.1	0.1	0.6

1/ Sound wood and bark.

2/ S - Softwoods, H - Hardwoods.

3/ Less than 0.05 cords per acre.

Table 15c. - Net annual growth[1] of saw timber[2] in the Piedmont by stand size and species group, 1946

(in thousand board feet)

Stand size	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	All species
Large saw timber	21,600	11,000	9,600	42,200
Small saw timber	156,400	21,200	26,300	203,900
Pole timber	54,000	16,500	16,700	87,200
Other stand sizes	12,300	2,100	1,400	15,800
All stands	244,300	50,800	54,000	349,100

[1] Log scale, International 1/4-inch rule, on sound-tree growing stock.

[2] Includes hardwoods 11.0 to 12.9 inches d.b.h.

Table 16c. - Net annual growth[1] of timber in the Piedmont by stand size and species group, 1946

ON SAW-TIMBER TREES (in standard cords)

Stand size	Softwoods		Gums, soft maple and yellow-poplar	Other hardwoods	All species
	Yellow pine	Other			
Large saw timber	47,300	1,700	25,200	25,500	99,700
Small saw timber	472,000	1,800	67,700	77,800	619,300
Pole timber	417,600	2,600	70,600	78,300	569,100
Other stand sizes	66,500	200	5,400	7,900	80,000
All stands	1,003,400	6,300	168,900	189,500	1,368,100

ON POLE TIMBER TREES (in standard cords)

Stand size	Yellow pine	Other	Gums, soft maple and yellow-poplar	Other hardwoods	All species
Large saw timber	2,400	400	9,900	2,400	15,100
Small saw timber	37,700	7,200	6,100	18,900	69,900
Pole timber	330,600	4,700	81,500	82,000	498,800
Other stand sizes	33,000	1,800	3,300	5,300	43,400
All stands	403,700	14,100	100,800	108,600	627,200
Saw-timber and pole timber trees[2]	1,407,100	20,400	269,700	298,100	1,995,300

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[1] Sound wood and bark.

[2] Excluding cull trees.

Table 17c. - Average net growth[1] of saw timber per acre in the Piedmont by forest type and stand size, 1947

(in board feet)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Other stand sizes	All stands
Longleaf pine	-	-	34	-	14
Loblolly pine	389	333	74	33	148
Shortleaf pine	196	177	67	10	86
Pond pine	-	-	-	-	-
Cypress	-	-	-	-	-
Lowland hardwoods	241	196	55	16	83
Upland hardwoods	114	122	51	3	70
All types	205	217	65	18	99

[1] Log scale, International 1/4-inch rule, on sound-tree growing stock.
Applies only to stands in which there was no cutting during 1947.

Table 18c. - Average net growth[1] of timber per acre in the Piedmont by forest type and stand size, 1947

(in cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Other stand sizes	All stands
Longleaf pine	–	–	1.1	–	0.4
Loblolly pine	1.3	1.1	1.1	0.2	0.8
Shortleaf pine	0.6	0.8	0.7	0.1	0.6
Pond pine	–	–	–	–	–
Cypress	–	–	–	–	–
Lowland hardwoods	0.7	0.6	0.9	0.1	0.5
Upland hardwoods	0.3	0.4	0.3	0.1	0.3
All types	0.6	0.8	0.7	0.1	0.6

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[1] Sound wood and bark, on the entire sound-tree growing stock, excluding cull trees. Applies only to stands in which there was no cutting during 1947.

Table 19c. - Commodity drain[1] from saw timber in the Piedmont by commodity and species group, 1946

SOUND TREES

Commodity	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	All species	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Lumber	220,874	47,788	31,062	299,724	71.7
Veneer bolts	155	10,894	236	11,285	2.7
Cooperage bolts	-	-	1,365	1,365	0.3
Pulpwood bolts	75,537	3,682	-	79,219	18.9
Poles	-	-	-	-	-
Piling	-	-	-	-	-
Posts	725	67	2,795	3,587	0.9
Mine timbers	-	-	-	-	-
Crossties (hewn)	144	79	2	225	0.1
Shingles	80	-	-	80	3/
Fuelwood	13,426	1,664	7,362	22,452	5.4
Other products[2]	-	-	114	114	3/
All commodities	310,941	64,174	42,936	418,051	100.0

1/ Log scale, International 1/4-inch rule.

2/ Handles, shuttle blocks, hardwood dimension, and miscellaneous farm use.

3/ Less than 0.05 percent.

Table 20c. - Commodity drain[1] from timber in the Piedmont by commodity and species group, 1946

SOUND TREES

Commodity	Softwoods		Gums, soft maple and yellow-poplar	Other hardwoods	All species	
	Yellow pine	Other				
	Standard cords	Standard cords	Standard cords	Standard cords	Standard cords	Percent
Lumber	526,000	9,400	116,100	75,400	726,900	49.1
Veneer bolts	100	300	25,100	500	26,000	1.8
Cooperage bolts	-	-	-	3,800	3,800	0.3
Pulpwood bolts	290,500	-	20,400	-	310,900	21.0
Poles	-	-	-	-	-	-
Piling	-	-	-	-	-	-
Posts	800	7,900	1,600	6,800	17,100	1.2
Mine timbers	-	-	-	-	-	-
Crossties (hewn)	300	-	300	-	600	3/
Shingles	200	-	-	-	200	3/
Fuelwood	183,000	500	49,500	154,000	387,000	26.2
Other products[2]	4,600	100	500	1,500	6,700	0.4
All commodities	1,005,500	18,200	213,500	242,000	1,479,200	100.0

CULL TREES

All commodities	89,400	400	24,200	75,300	189,300	-

1/ Sound wood and bark.

2/ Handles, shuttle blocks, hardwood dimension, and miscellaneous farm use.

3/ Less than 0.05 percent.

Table 21c. - Net change[1] in saw-timber growing stock[2] in the Piedmont by species group, 1946

SOUND TREES

Item	Softwoods	Gums, soft maple, and yellow-poplar	Other hardwoods	Total
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.
Growing stock, Jan. 1, 1946	4,234,400	981,600	1,206,400	6,422,400
Net growth	244,300	50,800	54,000	349,100
Commodity drain	310,900	64,200	42,900	418,000
Net change	- 66,600	- 13,400	+ 11,100	- 68,900
Growing stock, Jan. 1, 1947	4,167,800	968,200	1,217,500	6,353,500
Percent change	- 1.6	- 1.4	+ 0.9	- 1.1

[1] Log scale, International 1/4-inch rule.

[2] Includes hardwoods 11.0 to 12.9 inches d.b.h.

Table 22c. - Net change in growing stock of all timber[1] in the Piedmont by species group, 1946

ALL TIMBER (in standard cords)

Item	Softwoods	Gums, soft maple and yellow-poplar	Other hardwoods	Total
Growing stock, Jan. 1, 1946	21,506,700	5,463,400	7,249,500	34,219,600
Net growth:				
On trees 5.0" and larger, Jan. 1, 1946	1,224,800	215,500	240,000	1,680,300
Trees recruiting to 5.0" in 1946	202,700	54,200	58,100	315,000
Total	1,427,500	269,700	298,100	1,995,300
Commodity drain	1,023,700	213,500	242,000	1,479,200
Net change	+ 403,800	+ 56,200	+ 56,100	+ 516,100
Growing stock, Jan. 1, 1947	21,910,500	5,519,600	7,305,600	34,735,700
Percent change	+ 1.9	+ 1.0	+ 0.8	+ 1.5

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[1] The entire sound-tree growing stock, excluding cull trees.

Table 23. - Land area by county and broad use class, 1947.

County	Total land area 1/	Non-forest land	Forest land			
			All forest	Non-commercial 2/	Commercial	
	Acres	Acres	Acres	Acres	Acres	Percent
Abbeville	323,700	134,900	188,800	-	188,800	58.3
Aiken	703,900	253,700	450,200	900	449,300	63.8
Allendale	266,600	135,200	131,400	-	131,400	49.3
Anderson	494,300	320,600	173,700	-	173,700	35.1
Bamberg	252,800	126,800	126,000	100	125,900	49.8
Barnwell	352,800	205,000	147,800	200	147,600	41.8
Beaufort	426,500	237,100	189,400	1,500	187,900	44.1
Berkeley	685,200	92,200	593,000	-	593,000	86.5
Calhoun	243,100	119,600	123,500	-	123,500	50.8
Charleston	594,100	259,900	334,200	1,300	332,900	56.0
Cherokee	250,900	123,100	127,800	1,400	126,400	50.4
Chester	372,600	100,800	271,800	400	271,400	72.8
Chesterfield	506,800	196,800	310,000	6,900	303,100	59.8
Clarendon	384,300	155,800	228,500	-	228,500	59.5
Colleton	663,300	198,300	465,000	900	464,100	70.0
Darlington	347,500	139,000	208,500	3/	208,500	60.0
Dillon	260,200	116,100	144,100	-	144,100	55.4
Dorchester	363,400	95,200	268,200	700	267,500	73.6
Edgefield	308,700	107,700	201,000	-	201,000	65.1
Fairfield	449,500	98,200	351,300	-	351,300	78.2
Florence	512,600	218,700	293,900	-	293,900	57.3
Georgetown	520,200	104,600	415,600	5,900	409,700	78.8
Greenville	506,700	238,700	268,000	900	267,100	52.7
Greenwood	289,700	80,000	209,700	1,000	208,700	72.0
Hampton	359,100	119,600	239,500	100	239,400	66.7
Horry	733,600	176,000	557,600	800	556,800	75.9
Jasper	367,200	86,400	280,800	-	280,800	76.5
Kershaw	504,400	167,900	336,500	3/	336,500	66.7
Lancaster	321,700	122,300	199,400	3/	199,400	62.0
Laurens	455,000	190,000	265,000	-	265,000	58.2
Lee	261,200	150,600	110,600	2,800	107,800	41.3
Lexington	461,200	169,700	291,500	-	291,500	63.2
McCormick	234,200	41,900	192,300	-	192,300	82.1
Marion	309,800	85,100	224,700	3/	224,700	72.5
Marlboro	306,900	156,300	150,600	-	150,600	49.1
Newberry	405,400	145,500	259,900	300	259,600	64.0
Oconee	427,100	96,800	330,300	1,200	329,100	77.1
Orangeburg	699,700	380,800	318,900	1,500	317,400	45.4
Pickens	319,400	129,300	190,100	3,400	186,700	58.5
Richland	475,200	143,600	331,600	1,500	330,100	69.5
Saluda	286,300	132,100	154,200	-	154,200	53.9
Spartanburg	530,700	322,400	208,300	-	208,300	39.3
Sumter	425,600	220,000	205,600	1,100	204,500	48.0
Union	328,600	113,500	215,100	-	215,100	65.5
Williamsburg	597,100	167,300	429,800	-	429,800	72.0
York	439,200	210,300	228,900	8,300	220,600	50.2
State total	19,328,000	7,385,400	11,942,600	43,100	11,899,500	61.6

1/ Gross area from Bureau of the Census, 1940, less inland water area as estimated by the Forest Survey.

2/ Non-productive forest land plus forest land withdrawn from commercial timber use.

3/ Less than 50 acres.

Table 24. - Ownership of all commercial forest land by county, 1947

County	Private		Public					
			National forest	Other federal 1/	State 2/	County, city, town	Total public	
	Acres	Percent	Acres	Acres	Acres	Acres	Acres	Percent
Abbeville	172,100	91.2	16,600	-	-	100	16,700	8.8
Aiken	437,900	97.5	-	-	10,500	900	11,400	2.5
Allendale	131,400	100.0	-	-	-	-	-	0.0
Anderson	168,600	97.1	-	-	5,000	100	5,100	2.9
Bamberg	125,900	100.0	-	-	-	-	-	0.0
Barnwell	146,600	99.3	-	-	1,000	-	1,000	0.7
Beaufort	186,900	99.5	-	1,000	-	-	1,000	0.5
Berkeley	384,800	64.9	186,800	7,100	13,100	1,200	208,200	35.1
Calhoun	122,400	99.1	-	-	1,100	-	1,100	0.9
Charleston	268,900	80.8	58,400	3,600	100	1,900	64,000	19.2
Cherokee	126,300	99.9	-	-	-	100	100	0.1
Chester	262,100	96.6	8,900	-	-	400	9,300	3.4
Chesterfield	224,200	74.0	-	-	78,900	3/	78,900	26.0
Clarendon	222,800	97.5	-	-	5,700	-	5,700	2.5
Colleton	462,700	99.7	-	-	-	1,400	1,400	0.3
Darlington	207,700	99.6	-	-	700	100	800	0.4
Dillon	144,100	100.0	-	-	-	-	-	0.0
Dorchester	267,500	100.0	-	-	-	-	-	0.0
Edgefield	178,600	88.9	22,100	-	-	300	22,400	11.1
Fairfield	340,100	96.8	11,200	-	-	-	11,200	3.2
Florence	293,400	99.8	-	-	100	400	500	0.2
Georgetown	374,200	91.3	-	35,500	-	-	35,500	8.7
Greenville	260,500	97.5	-	200	-	6,400	6,600	2.5
Greenwood	199,200	95.4	8,300	400	-	800	9,500	4.6
Hampton	234,200	97.8	-	-	5,200	-	5,200	2.2
Horry	506,800	91.0	-	50,000	-	3/	50,000	9.0
Jasper	280,000	99.7	-	800	-	-	800	0.3
Kershaw	336,200	99.9	-	-	200	100	300	0.1
Lancaster	199,300	99.9	-	-	3/	100	100	0.1
Laurens	247,500	93.4	16,700	-	-	800	17,500	6.6
Lee	107,800	100.0	-	-	-	3/	3/	0.0
Lexington	289,700	99.4	-	-	1,500	300	1,800	0.6
McCormick	157,200	81.7	35,100	-	-	-	35,100	18.3
Marion	224,700	100.0	-	-	-	3/	3/	0.0
Marlboro	150,500	99.9	-	-	-	100	100	0.1
Newberry	216,000	83.2	43,300	-	-	300	43,600	16.8
Oconee	258,800	78.6	62,400	-	6,200	1,700	70,300	21.4
Orangeburg	315,600	99.4	-	100	1,700	3/	1,800	0.6
Pickens	176,900	94.8	-	-	7,500	2,300	9,800	5.2
Richland	282,900	85.7	-	42,100	4,500	600	47,200	14.3
Saluda	150,700	97.7	3,400	-	-	100	3,500	2.3
Spartanburg	207,700	99.7	-	-	100	500	600	0.3
Sumter	174,900	85.5	-	200	29,200	200	29,600	14.5
Union	172,200	80.1	42,800	-	-	100	42,900	19.9
Williamsburg	429,800	100.0	-	-	-	-	-	0.0
York	217,800	98.7	-	2,600	-	200	2,800	1.3
State total	11,046,100	92.8	516,000	143,600	172,300	21,500	853,400	7.2

1/ Includes Indian tribal allotments.

2/ Includes 122,800 acres under long-term lease from the Federal Government.

3/ Less than 50 acres.

Table 25. - Net volume[1] of all trees by county, preferred

SOUND TREES (in thousand cords)

Line No.	County	Yellow pines		Gums, soft maple, and yellow-poplar[2]		Other species[3]		All species
		5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	
1	Abbeville	615	59	249	186	465	126	1,700
2	Aiken	1,453	612	312	236	281	131	3,025
3	Allendale	337	127	153	118	167	97	999
4	Anderson	558	96	181	69	198	110	1,212
5	Bamberg	223	190	290	283	372	208	1,566
6	Barnwell	70	40	443	434	109	176	1,272
7	Beaufort	393	503	202	170	178	83	1,529
8	Berkeley	1,861	2,673	1,057	1,289	667	990	8,537
9	Calhoun	261	258	194	385	220	70	1,388
10	Charleston	930	2,001	534	462	775	232	4,934
11	Cherokee	653	105	75	14	158	61	1,066
12	Chester	819	183	330	137	311	75	1,855
13	Chesterfield	795	677	587	284	172	86	2,601
14	Clarendon	380	546	233	377	244	236	2,016
15	Colleton	973	1,332	1,091	723	868	610	5,597
16	Darlington	459	397	403	454	195	171	2,079
17	Dillon	324	488	379	413	108	179	1,891
18	Dorchester	873	1,019	574	775	385	601	4,227
19	Edgefield	1,136	146	190	69	241	61	1,843
20	Fairfield	1,633	376	356	82	455	164	3,066
21	Florence	1,028	752	558	628	259	267	3,492
22	Georgetown	916	1,449	1,070	1,196	609	680	5,920
23	Greenville	792	110	379	84	235	178	1,778
24	Greenwood	1,057	235	107	115	180	80	1,774
25	Hampton	334	517	306	159	278	110	1,704
26	Horry	1,311	1,509	1,008	866	417	678	5,789
27	Jasper	779	544	415	272	122	135	2,267
28	Kershaw	871	265	975	365	285	94	2,855
29	Lancaster	853	106	329	108	257	17	1,670
30	Laurens	1,246	303	177	191	300	152	2,369
31	Lee	309	319	366	334	86	32	1,446
32	Lexington	1,030	247	207	131	111	37	1,763
33	McCormick	1,181	292	147	116	125	65	1,926
34	Marion	508	331	536	536	194	248	2,353
35	Marlboro	166	221	424	357	349	108	1,625
36	Newberry	1,837	433	310	64	219	89	2,952
37	Oconee	991	312	172	293	650	358	2,776
38	Orangeburg	791	932	843	1,031	436	556	4,589
39	Pickens	787	101	53	16	476	239	1,672
40	Richland	1,086	401	410	561	394	495	3,347
41	Saluda	990	337	59	28	279	86	1,779
42	Spartanburg	918	152	150	76	185	85	1,566
43	Sumter	100	225	603	997	340	511	2,776
44	Union	581	252	252	210	267	213	1,775
45	Williamsburg	1,062	1,102	354	360	497	379	3,754
46	York	1,018	187	113	112	346	181	1,957
	State total	37,288	23,462	18,156	16,166	14,465	10,540	120,077

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[1] Sound wood and bark (limbs of sound sawlog-size hardwood trees are included in cull volumes).

pulping species, and tree diameter group, 1947

CULL TREES (in thousand cords)

Yellow pines		Gums, soft maple, and yellow-poplar 2/		Other species 3/		All species	
5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches		
47	-	66	49	151	95	408	1
54	29	175	266	186	201	911	2
-	-	26	35	64	42	167	3
31	-	41	17	50	128	267	4
8	-	93	164	96	30	391	5
-	5	212	188	52	84	541	6
24	33	61	77	250	149	594	7
20	4	341	562	362	539	1,828	8
3	-	74	284	48	45	454	9
51	27	223	230	140	211	882	10
42	13	27	32	97	38	249	11
141	20	72	103	114	88	538	12
27	49	193	96	142	75	582	13
12	-	102	165	63	168	510	14
25	11	238	260	185	331	1,050	15
32	11	138	189	114	101	585	16
34	-	191	275	53	120	675	17
21	24	136	246	120	211	758	18
114	35	43	22	108	127	449	19
57	28	22	40	120	87	354	20
10	34	271	340	75	537	1,267	21
23	11	340	672	214	159	1,419	22
139	4	139	112	217	363	974	23
19	10	23	77	69	77	275	24
4	6	92	235	115	184	636	25
43	36	465	727	295	474	2,040	26
19	18	196	177	123	152	685	27
76	100	261	256	176	98	967	28
64	19	50	44	133	40	350	29
115	32	57	57	98	74	433	30
16	5	150	120	11	23	325	31
24	12	69	24	123	23	275	32
29	26	50	13	114	75	307	33
5	5	286	431	108	123	958	34
2	8	169	183	62	77	501	35
147	15	46	16	105	113	442	36
65	2	79	78	388	418	1,030	37
-	-	206	567	208	261	1,242	38
72	-	41	12	238	191	554	39
35	5	150	282	263	253	988	40
5	6	52	2	103	55	223	41
56	-	126	13	113	69	377	42
1	-	158	598	215	221	1,193	43
55	61	155	35	103	85	494	44
26	6	176	439	304	499	1,450	45
12	32	29	9	59	135	276	46
1,807	742	6,310	8,819	6,547	7,649	31,874	

2/ Includes cottonwood, willow, other soft-textured hardwoods, and hemlock.

3/ Includes cypress, cedar, white pine, and hard-textured hardwoods.

Table 26. - Net volume[1] of saw timber by county and species group, 1947.

(in thousand board feet)

County	Softwoods[2]	Gums, soft maple and yellow-poplar[3]	Other hardwoods	All species
Abbeville	85,000	96,800	68,700	250,500
Aiken	497,900	129,400	79,700	707,000
Allendale	134,900	61,400	40,300	236,600
Anderson	128,500	32,300	56,100	216,900
Bamberg	233,000	137,100	37,000	407,100
Barnwell	43,800	227,000	63,400	334,200
Beaufort	281,500	92,300	39,400	413,200
Berkeley	1,640,500	617,800	301,100	2,559,400
Calhoun	164,400	162,900	29,600	356,900
Charleston	1,143,200	218,800	87,700	1,449,700
Cherokee	125,500	12,500	36,900	174,900
Chester	204,500	67,000	37,200	308,700
Chesterfield	429,900	155,400	45,000	630,300
Clarendon	336,100	176,100	109,900	622,100
Colleton	853,100	370,800	219,200	1,443,100
Darlington	253,000	222,100	78,500	553,600
Dillon	297,700	200,900	59,000	557,600
Dorchester	706,000	358,200	165,700	1,229,900
Edgefield	213,300	42,400	41,500	297,200
Fairfield	394,500	51,900	88,800	535,200
Florence	542,300	298,900	110,900	952,100
Georgetown	1,010,300	581,400	110,800	1,702,500
Greenville	142,100	37,900	83,400	263,400
Greenwood	268,000	55,800	39,000	362,800
Hampton	296,800	94,900	57,300	449,000
Horry	999,200	436,000	250,500	1,685,700
Jasper	389,200	149,000	56,300	594,500
Kershaw	260,700	210,500	52,300	523,500
Lancaster	177,300	56,000	16,700	250,000
Laurens	302,900	92,400	67,400	462,700
Lee	184,100	157,000	14,000	355,100
Lexington	258,300	69,500	17,700	345,500
Marion	302,700	262,300	61,600	626,600
Marlboro	185,300	179,000	47,200	411,500
McCormick	348,800	55,900	37,500	442,200
Newberry	434,000	36,300	48,300	518,600
Oconee	348,700	114,800	181,400	644,900
Orangeburg	673,200	491,300	194,500	1,359,000
Pickens	109,900	10,800	128,200	248,900
Richland	428,600	250,200	188,100	866,900
Saluda	316,700	10,400	47,700	374,800
Spartanburg	200,500	34,500	45,900	280,900
Sumter	119,900	446,000	220,000	785,900
Union	198,700	106,600	100,800	406,100
Williamsburg	726,300	171,500	113,100	1,010,900
York	168,900	53,900	92,000	314,800
State total	17,559,700	7,895,900	4,067,300	29,522,900

1/ Log scale, International 1/4-inch rule.

2/ Includes pine and cypress.

3/ Includes cottonwood, willow, magnolia, and other soft-textured hardwoods.

4/ Includes oaks, hickories, ash, elm, and other hard-textured hardwoods.

Table 27. - Net volume[1] of saw timber by county, broad species group, and diameter class group, 1947.

(in thousand board feet)

County	Softwoods		Hardwoods		Percent	
	9 - 14 inches	15 + inches	11 - 16 inches	17 + inches	Soft-woods	Hard-woods
Abbeville	73,400	11,600	145,600	19,900	33.9	66.1
Aiken	294,500	203,400	169,800	39,300	70.4	29.6
Allendale	111,900	23,000	74,600	27,100	57.0	43.0
Anderson	116,600	11,900	57,100	31,300	59.2	40.8
Bamberg	132,100	100,900	129,700	44,400	57.2	42.8
Barnwell	19,500	24,300	192,600	97,800	13.1	86.9
Beaufort	115,600	165,900	108,100	23,600	68.1	31.9
Berkeley	740,000	900,500	513,800	405,100	64.1	35.9
Calhoun	76,300	88,100	106,400	86,100	46.1	53.9
Charleston	517,600	625,600	188,600	117,900	78.9	21.1
Cherokee	95,400	30,100	49,400	-	71.8	28.2
Chester	158,400	46,100	85,400	18,800	66.2	33.8
Chesterfield	264,600	165,300	150,200	50,200	68.2	31.8
Clarendon	170,300	165,800	144,700	141,300	54.0	46.0
Colleton	374,900	478,200	340,400	249,600	59.1	40.9
Darlington	134,600	118,400	181,200	119,400	45.7	54.3
Dillon	120,800	176,900	183,400	76,500	53.4	46.6
Dorchester	293,400	412,600	259,800	264,100	57.4	42.6
Edgefield	174,700	38,600	51,900	32,000	71.8	28.2
Fairfield	312,100	82,400	109,200	31,500	73.7	26.3
Florence	352,700	189,600	196,600	213,200	57.0	43.0
Georgetown	502,900	507,400	388,600	303,600	59.3	40.7
Greenville	108,600	33,500	71,300	50,000	53.9	46.1
Greenwood	218,900	49,100	48,400	46,400	73.9	26.1
Hampton	174,700	122,100	126,200	26,000	66.1	33.9
Horry	575,200	424,000	366,000	320,500	59.3	40.7
Jasper	221,800	167,400	113,700	91,600	65.5	34.5
Kershaw	230,900	29,800	239,200	23,600	49.8	50.2
Lancaster	159,900	17,400	60,900	11,800	70.9	29.1
Laurens	206,300	96,600	99,100	60,700	65.5	34.5
Lee	75,700	108,400	115,800	55,200	51.8	48.2
Lexington	204,200	54,100	60,000	27,200	74.8	25.2
Marion	204,600	98,100	181,900	142,000	48.3	51.7
Marlboro	99,300	86,000	144,300	81,900	45.0	55.0
McCormick	310,500	38,300	78,400	15,000	78.9	21.1
Newberry	328,100	105,900	54,500	30,100	83.7	16.3
Oconee	255,300	93,400	165,500	130,700	54.1	45.9
Orangeburg	256,200	417,000	352,500	333,300	49.5	50.5
Pickens	83,000	26,900	74,300	64,700	44.2	55.8
Richland	307,700	120,900	168,900	269,400	49.4	50.6
Saluda	220,200	96,500	48,500	9,600	84.5	15.5
Spartanburg	179,100	21,400	51,200	29,200	71.4	28.6
Sumter	19,500	100,400	247,000	419,000	15.3	84.7
Union	121,700	77,000	100,800	106,600	48.9	51.1
Williamsburg	360,700	365,600	179,200	105,400	71.8	28.2
York	109,100	59,800	86,500	59,400	53.7	46.3
State total	10,183,500	7,376,200	7,061,200	4,902,000	59.5	40.5

1/ Log scale, International 1/4-inch rule.

Table 28. - Total commodity drain by county and species group, 1946

County	Saw timber			All sound trees five inches d.b.h. and larger		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Cords	Cords	Cords
Abbeville	9,835	6,182	16,017	37,000	23,800	60,800
Aiken	19,373	10,519	29,892	52,600	41,600	94,200
Allendale	12,773	11,819	24,592	43,100	32,400	75,500
Anderson	9,828	4,333	14,161	41,500	22,300	63,800
Bamberg	7,252	8,183	15,435	22,800	24,800	47,600
Barnwell	13,278	9,046	22,324	36,800	29,500	66,300
Beaufort	18,086	7,553	25,639	52,700	19,500	72,200
Berkeley	49,992	7,646	57,638	143,600	22,700	166,300
Calhoun	12,670	7,043	19,713	35,800	25,400	61,200
Charleston	69,407	14,577	83,984	183,900	50,000	233,900
Cherokee	6,406	2,771	9,177	22,900	17,200	40,100
Chester	9,317	2,828	12,145	35,800	13,900	49,700
Chesterfield	20,185	12,973	33,158	57,700	42,500	100,200
Clarendon	23,578	8,530	32,108	67,900	37,800	105,700
Colleton	48,213	20,567	68,780	131,300	55,300	186,600
Darlington	12,377	6,730	19,107	43,300	28,700	72,000
Dillon	6,571	5,899	12,470	19,100	27,100	46,200
Dorchester	52,628	14,189	66,817	157,900	39,400	197,300
Edgefield	19,539	6,979	26,518	57,200	28,400	85,600
Fairfield	37,578	5,433	43,011	130,700	26,400	157,100
Florence	35,354	18,970	54,324	115,600	142,200	257,800
Georgetown	41,996	14,208	56,204	123,500	49,400	172,900
Greenville	14,975	14,343	29,318	45,900	44,000	89,900
Greenwood	13,180	4,720	17,900	44,600	17,900	62,500
Hampton	29,471	8,528	37,999	85,600	30,400	116,000
Horry	27,332	6,626	33,958	93,400	80,500	173,900
Jasper	29,418	18,439	47,857	87,400	48,800	136,200
Kershaw	32,957	10,956	43,913	99,900	47,300	147,200
Lancaster	14,393	7,455	21,848	48,400	20,900	69,300
Laurens	13,098	4,082	17,180	56,100	32,300	88,400
Lee	10,012	6,448	16,460	30,100	29,700	59,800
Lexington	29,993	6,488	36,481	88,500	31,000	119,500
Marion	16,032	23,605	39,637	52,000	79,500	131,500
Marlboro	9,001	11,648	20,649	22,600	36,400	59,000
McCormick	20,822	2,456	23,278	69,500	9,000	78,500
Newberry	36,205	8,906	45,111	113,300	37,400	150,700
Oconee	23,952	8,682	32,634	66,300	37,400	103,700
Orangeburg	39,816	25,215	65,031	112,500	85,000	197,500
Pickens	13,262	9,469	22,731	36,900	31,800	68,700
Richland	24,304	10,823	35,127	78,600	34,300	112,900
Saluda	20,632	5,947	26,579	55,600	21,500	77,100
Spartanburg	21,838	4,789	26,627	46,800	17,600	64,400
Sumter	21,545	11,736	33,281	60,000	44,900	104,900
Union	18,258	3,781	22,039	76,300	23,400	99,700
Williamsburg	46,231	23,338	69,569	133,500	103,400	236,900
York	7,823	3,954	11,777	38,900	30,300	69,200
State total	1,070,786	449,412	1,520,198	3,255,400	1,775,000	5,030,400

STANDARD FOREST SURVEY TABLES

As each state throughout the Nation is reported upon by the Forest Survey following initial or resurveys, it is planned to prepare a standard set of tables for each state presenting information on forest area, ownership, timber volume, growth, and drain. With such tables available, forest statistics for any group of states can be compiled. At the present time, the exact format of the tables for nation-wide use has not been definitely established, but tables 29 through 40, which follow, closely approximate the form which will be used.

Table 29. - Area of forest and non-forest land in South Carolina, 1947

Kind of land	Land area
	M acres
Forest land:	
Commercial	11,900
Non-commercial	43
All forest land	11,943
Non-forest land	7,385
All land	19,328

Table 30. - Area of commercial forest land in South Carolina by stand size and ownership, 1947

Ownership	Saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands[1]
	M acres	M acres	M acres	M acres	M acres
Federally owned or managed:					
National Forest	250	181	69	16	516
Indian[2]	1	2	[3]	[3]	3
Other	54	19	60	8	141
Total Federal	305	202	129	24	660
State	49	32	84	7	172
County and Municipal	14	5	3	[3]	22
Private	4,674	2,829	2,685	858	11,046
All ownerships	5,042	3,068	2,901	889	11,900

1/ For corresponding saw-timber volume see table 32.

2/ Includes tribal and trust allotments but not patented lands owned by Indians.

3/ Less than 500 acres.

Table 31. - Area of saw-timber stands on commercial forest land in South Carolina by broad forest type and character of growth, 1947

Character of growth	Softwood	Hardwood	All types
	M acres	M acres	M acres
Virgin	-	-	-
Second growth	3,228	1,813	5,041
Total	3,228	1,813	5,041

Table 32. - Board-foot volume[1/] of saw-timber trees on commercial forest land in South Carolina by stand size and species, 1947

IN SOUND TREES

Species	Saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
	M bd. ft.	M bd. ft.	M bd. ft.	M bd. ft.	M bd. ft.
Softwoods:					
Longleaf pine	1,754,400	246,300	191,900	67,100	2,259,700
Loblolly pine	8,863,600	613,100	396,600	43,500	9,916,800
Shortleaf pine	1,874,700	619,400	68,700	18,000	2,580,800
Other pines	1,238,000	122,400	81,600	4,000	1,446,000
Cypress	1,212,900	65,400	13,900	-	1,292,200
Hemlock	32,800	-		-	32,800
Cedar	15,000	12,500	3,900	-	31,400
Total	14,991,400	1,679,100	756,600	132,600	17,559,700
Hardwoods:					
Tupelo	3,212,100	131,400	48,000	6,100	3,397,600
Sweetgum	2,205,500	151,600	62,600	5,200	2,424,900
Soft maple	647,300	39,500	1,900	-	688,700
Yellow-poplar	1,012,800	160,200	30,900	3,800	1,207,700
Other soft hdwds.	149,500	10,400	-	17,100	177,000
Red oaks	1,628,800	235,000	62,800	3,900	1,930,500
White oaks	592,400	76,400	24,000	2,800	695,600
Hickory	446,200	56,300	22,200	-	524,700
Ash	375,200	41,900	-	-	417,100
Sycamore, birch	435,000	48,900	13,000	2,500	499,400
Total	10,704,800	951,600	265,400	41,400	11,963,200
All sound trees	25,696,200	2,630,700	1,022,000	174,000	29,522,900

IN DEAD TREES[2/]

Dead chestnut	-	-	-	-	-
ALL MATERIAL	25,696,200	2,630,700	1,022,000	174,000	29,522,900

[1/] Log scale, International 1/4-inch rule.

[2/] Standing or down suitable for salvage.

Table 33. - Board-foot volume[1] of saw-timber trees on commercial forest land in South Carolina by species group and ownership, 1947

Ownership	Softwoods	Hardwoods	All species[2]
	M bd. ft.	M bd. ft.	M bd. ft.
Federally owned or managed:			
National Forest	1,109,700	268,500	1,378,200
Indian	3,200	1,600	4,800
Other	277,300	35,200	312,500
Total Federal	1,390,200	305,300	1,695,500
State	195,300	96,800	292,100
County and Municipal	28,600	24,300	52,900
Private	15,945,600	11,536,800	27,482,400
All ownerships	17,559,700	11,963,200	29,522,900

1/ Log scale, International 1/4-inch rule.

2/ For corresponding areas, see table 30.

Table 34. - Cubic-foot volume[1] of saw timber and pole timber on commercial forest land in South Carolina by stand size and species, 1947

IN SOUND TREES

Species	Saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.
Softwoods:					
Longleaf pine	441,232	123,170	68,298	14,227	646,927
Loblolly pine	1,942,716	332,298	129,434	12,791	2,417,239
Shortleaf pine	541,457	376,441	33,120	6,329	957,347
Other pines	284,706	79,875	21,240	7,454	393,275
Cypress	304,688	48,642	6,449	-	359,779
Hemlock	6,478	37	-	-	6,515
Cedar	11,696	10,664	2,155	314	24,829
Total	3,532,973	971,127	260,696	41,115	4,805,911
Hardwoods:					
Tupelo	1,009,396	99,030	16,689	1,610	1,126,725
Sweetgum	596,929	122,070	23,295	2,828	745,122
Soft maple	237,198	35,995	1,048	-	274,241
Yellow-poplar	238,581	54,439	8,456	1,141	302,617
Other soft hdwds.	46,007	26,845	601	3,533	76,986
Red oaks	437,093	119,671	24,686	1,235	582,685
White oaks	197,774	77,848	21,190	1,039	297,851
Hickory	125,884	49,650	8,935	3,231	187,700
Ash	118,722	28,286	1,055	-	148,063
Other hard hdwds.	173,874	64,258	10,588	2,546	251,266
Total	3,181,458	678,092	116,543	17,163	3,993,256
All sound trees	6,714,431	1,649,219	377,239	58,278	8,799,167

IN CULL TREES

Softwoods	82,987	89,165	33,078	21,615	226,845
Hardwoods	1,423,025	352,252	203,291	21,139	1,999,707
All cull trees	1,506,012	441,417	236,369	42,754	2,226,552

IN DEAD TREES[2]

Dead chestnut	-	-	-	-	-
ALL MATERIAL	8,220,443	2,090,636	613,608	101,032	11,025,719

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[1] Excluding bark.

[2] Standing or down suitable for salvage

Table 35. - Cubic-foot volume[1] of saw-timber and pole timber trees on commercial forest land in South Carolina by species group, tree size and kind of material, 1947

IN LIVING TREES

Tree size and kind of material	Softwoods	Hardwoods	All species
	M cu. ft.	M cu. ft.	M cu. ft.
Saw-timber trees:			
Sawlog material	2,851,777	2,012,704	4,864,481
Upper stems	663,080	451,388	1,114,468
Pole timber trees	1,291,054	1,529,164	2,820,218
Cull trees[2]	226,845	1,999,707	2,226,552
All living	5,032,756	5,992,963	11,025,719

IN DEAD TREES[3]

All classes	-	-	-
ALL MATERIAL	5,032,756	5,992,963	11,025,719

[1] Excluding bark.

[2] Includes limbs of sound saw-timber trees.

[3] Standing or down suitable for salvage.

Table 36. - Cubic-foot[1] volume of commodity drain from growing stock on commercial forest land in South Carolina by commodity, tree size, and species group, 1946

SOUND TREES (in thousand cubic feet)

Commodity	Saw-timber trees			Pole timber trees			Total		
	Softwoods	Hardwoods	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods	All species
Lumber	144,605	52,863	197,468	1,267	5	1,272	145,872	52,868	198,740
Veneer bolts	4,405	25,959	30,364	-	-	-	4,405	25,959	30,364
Cooperage bolts	-	828	828	-	-	-	-	828	828
Pulpwood bolts	49,337	4,232	53,569	19,956	3,299	23,255	69,293	7,531	76,824
Poles	4,435	-	4,435	59	-	59	4,494	-	4,494
Piling	672	-	672	-	-	-	672	-	672
Posts	110	136	246	1,488	1,825	3,313	1,598	1,961	3,559
Mine timbers	189	-	189	82	-	82	271	-	271
Crossties (hewn)	1,050	1,069	2,119	-	-	-	1,050	1,069	2,119
Shingles	26	-	26	-	-	-	26	-	26
Fuelwood	3,534	6,070	9,604	24,187	41,533	65,720	27,721	47,603	75,324
Other products[2]	149	1,540	1,689	2,018	1,262	3,280	2,167	2,802	4,969
All commodities	208,512	92,697	301,209	49,057	47,924	96,981	257,569	140,621	398,190

CULL TREES (in thousand cubic feet)

Commodity	Saw-timber trees			Pole timber trees			Total		
All commodities	3,169	2,085	5,254	11,501	24,641	36,142	14,670	26,726	41,396

---

[1] Excluding bark.

Table 37. - Board foot volume[1] of commodity drain from sawtimber growing stock on commercial forest land in South Carolina by commodity and species group, 1946

SOUND TREES

Commodity	Softwoods	Hardwoods	Total
	M bd. ft.	M bd. ft.	M bd. ft.
Lumber	748,931	265,520	1,014,451
Veneer bolts	18,581	130,907	149,488
Cooperage bolts	-	3,768	3,768
Pulpwood bolts	230,385	16,841	247,226
Poles	21,799	-	21,799
Piling	3,271	-	3,271
Posts	1,043	3,225	4,268
Mine timbers	595	-	595
Crossties (hewn)	6,106	4,363	10,469
Shingles	150	-	150
Fuelwood	39,323	16,970	56,293
Other products[2]	602	7,818	8,420
All commodities	1,070,786	449,412	1,520,198

---

[1] Log scale, International 1/4-inch rule.

[2] Handles, shuttle blocks, hardwood dimension, and miscellaneous farm use.

Table 38. - Volume of growing stock killed[1] by fire and natural causes[2] on commercial forest land in South Carolina by species group and tree size, 1946

CUBIC-FOOT VOLUME

Tree size	Softwoods	Hardwoods	All species
	M cu. ft.	M cu. ft.	M cu. ft.
Saw-timber trees	18,152	4,224	22,376
Pole timber trees	8,118	3,803	11,921
Total	26,270	8,027	34,297

BOARD-FOOT VOLUME

	M bd. ft.	M bd. ft.	M bd. ft.
Saw-timber trees	94,700	22,700	117,400

[1] Unsalvaged.

[2] Insects, disease, windthrow, etc.

Table 39. - Current annual net growth[1] on commercial forest land in South Carolina by species group and tree size, 1946

CUBIC-FOOT VOLUME

Tree size	Softwoods	Hardwoods	All species
	M cu. ft.	M cu. ft.	M cu. ft.
Saw-timber trees	235,088	125,959	361,047
Pole timber trees	33,092	24,349	57,441
Total	268,180	150,308	418,488

BOARD-FOOT VOLUME

	M bd. ft.	M bd. ft.	M bd. ft.
Saw-timber trees	930,500	526,600	1,457,100

[1] Includes only the growth on the sound-tree or "desirable" growing stock.

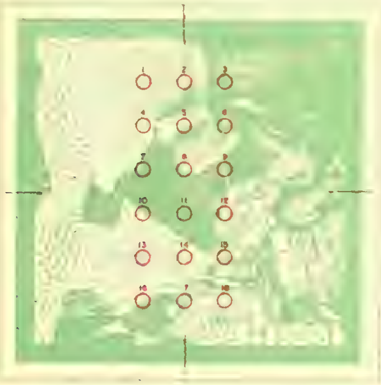
Table 40. - Change in growing stock volume during 1946 in South Carolina by species group

CUBIC-FOOT VOLUME

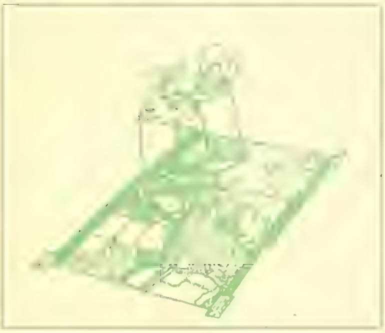
Item	Softwoods	Hardwoods	All species
	M cu. ft.	M cu. ft.	M cu. ft.
Growing stock, Jan. 1, 1946	4,795,300	3,983,569	8,778,869
Net growth	268,180	150,308	418,488
Commodity drain	257,569	140,621	398,190
Net change	+ 10,611	+ 9,687	+ 20,298
Growing stock, Jan. 1, 1947	4,805,911	3,993,256	8,799,167
BOARD-FOOT VOLUME			
	M bd. ft.	M bd. ft.	M bd. ft.
Growing stock, Jan. 1, 1946	17,700,000	11,886,000	29,586,000
Net growth	930,500	526,600	1,457,100
Commodity drain	1,070,800	449,400	1,520,200
Net change	- 140,300	+ 77,200	- 63,100
Growing stock, Jan. 1, 1947	17,559,700	11,963,200	29,522,900

HOW THE FOREST INVENTORY IS MADE

The present system of inventory is based upon interpretation of aerial photographs supplemented by cruising of randomly selected ground plots. The county is the basic work unit. Steps in the procedure are as follows:



1. Acreages of forest land are estimated with the use of a dot grid placed on every third contact print along flight lines in each county. The proportion of dots falling on forest areas when applied to the gross area of the county yields a preliminary estimate of the acreage of forest land. This is later revised after certain field checks.

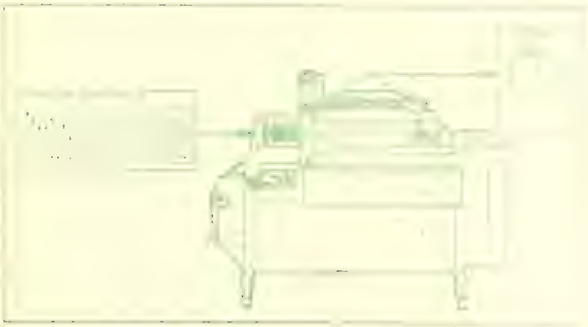


2. Every 5th plot listed as forest in step one is classified into forest type, stand class, and density class by careful stereoscopic analysis of the photographs. The proportion of plots falling in each classification when applied to the forest area of the county gives the area in each classification. These areas are revised following ground checking.

3. Timber cruisers make a detailed on-the-ground tally of a proportion of the photo plots in each stand class to obtain volume, growth, cull, and mortality data, and to check accuracy of photo classification. Proportions vary according to distribution of stand classes; in the Coastal Plain every 3rd large saw-timber photo plot, every 8th small saw-timber, every 17th pole-timber, and every 30th seedling, sapling, and denuded plot was taken. A sample of idle and agricultural plots is also checked.

4. Growth estimates are based on increment borings taken from trees of the various diameters and species in each forest type and stand class.

5. Estimates of the amount of wood produced as primary forest products are obtained from sawmills, pulpmills, veneer plants, and other wood-using industries. Other surveys are made to determine the amount of fuelwood and fence-post production. In addition, studies of wood utilization are made to adjust reported production of the various commodities to drain in terms of inventory volumes.



6. All field data are sent to Asheville for editing and are placed on punch cards for machine tabulation. Final estimates are based on statistical summaries.

DEFINITION OF TERMS

Land-Use Classes

Forest. Land bearing forest growth, land from which the forest has been removed and which shows no evidence of any other recent land use, or former agricultural land which now has a five-percent stocking of trees. Subdivided into the following classes:

Commercial: Land bearing, or capable of bearing, timber of commercial character and available now or prospectively for commercial use.

Withdrawn: Forest land in public ownership upon which commercial timber cutting is prohibited.

Non-productive: Forest land of such low productivity or so inaccessible that commercial timber will not be produced.

Non-forest. Land less than five percent stocked with trees and showing evidence of non-forest use.

Agriculture: Under cultivation or in pasture, including farm yards on active farms.

Idle: Land previously cultivated or pastured but now idle or abandoned. If reverting to forest there must be less than five percent stocking of trees.

Marsh: Low, boggy, non-forested land usually supporting a heavy growth of grass.

Sand dunes and beach: Non-forested sand dunes or coastal beaches.

Water: Includes both the small ponds and lakes less than 40 acres in size and streams, sloughs, and canals less than ten chains in width classed as "land area" by the Bureau of the Census. Also includes the "inland water" listed by the Census. On coastal areas the water-line is the mean high-tide mark; tidal flats are classed as water.

Urban and other: Includes towns, suburban areas being developed for residential or other urban purposes, school yards, cemeteries, industrial sites, roads, railroads, power lines, and other rights-of-way. Scattered areas of timber within exterior boundaries of cities or villages are also included.

Forest Types

Longleaf pine. Stands in which coniferous species comprise at least 25 percent of the dominant and co-dominant trees, with longleaf pine predominating. Slash pine is included in this type.

Loblolly pine. Stands in which coniferous species comprise at least 25 percent of the dominant trees, with loblolly pine predominating. Spruce pine is included in this type.

Shortleaf pine. Stands in which coniferous species comprise at least 25 percent of the dominant and co-dominant trees, with shortleaf pine predominating. Virginia pine and redcedar are included in this type.

Pond pine. Stands in which coniferous species comprise at least 25 percent of the dominant and co-dominant trees with pond pine predominating.

Cypress. Stands in which cypress or cypress in mixture with tupelo comprise at least 25 percent of the dominant and co-dominant trees, with cypress predominating.

Lowland hardwoods. Stands in which mixed hardwoods such as tupelo gum, blackgum, sweetgum, white oak, water oak, red maple, and ash comprise at least 75 percent of the dominant and co-dominant trees. Found along rivers, small streams, and on flat, poorly-drained areas of the Coastal Plain.

Upland hardwoods. Stands in which mixed hardwoods such as southern red oak, scarlet oak, white oak, black oak, post oak, hickory, and yellow-poplar comprise at least 75 percent of the dominant and co-dominant trees. Found on mountain slopes, the rolling hills of the Piedmont, and occasionally on the drier sites in the Coastal Plain.

Scrub oak. Stands in which scrub species such as blackjack, bluejack, turkey, and laurel oaks predominate and in which sound commercial species comprise less than five percent of satisfactory stocking.

Stand-Size Classes

Saw timber. Stands containing at least 1,500 board feet net, International 1/4-inch log rule, per acre in sound, live, softwood trees 9.0 inches d.b.h. or larger or hardwood trees 11.0 inches d.b.h. or larger. Two classes of saw-timber stands are recognized:

> Large saw timber: Stands of saw timber having more than 50 percent of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Small saw timber: Stands of saw timber having 50 percent or less of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Pole timber. Stands at least 10 percent stocked with pole-size or larger timber, at least one-half in pole sizes, and which have less than 1,500 board feet net per acre of saw timber.

Seedling and sapling. Stands less than 10 percent stocked by pole-size or larger trees and with less than 1,500 board feet net per acre, but at least 40 percent stocked with commercial species. Eight hundred seedlings or saplings per acre are considered full stocking.

Poorly stocked and unstocked. Stands of pole-size or larger trees that are less than 10 percent stocked, seedling or sapling stands less than 40 percent stocked, or nonstocked forest land.

Diameters

D.b.h. (diameter at breast height). Stem diameter in inches, outside bark, measured at 4½ feet above the ground.

Diameter class. All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint; e.g., trees 7.0 to and including 8.9 inches are in the 8-inch class.

Tree Classification

Sound saw-timber trees. Softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable butt log 12 feet long, or with 50 percent of the gross volume of the tree in sound saw timber.

Sound pole-timber trees. Straight-boled trees between 5.0 inches d.b.h. and saw-timber size.

Cull trees. Trees that fail to qualify as sound saw timber or pole timber because of poor form, excessive limbiness, rot, or other defect. Volumes shown for cull trees include also the limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of saw-timber size hardwoods.

Species Groups

Softwoods. All of the pines, eastern redcedar, pond cypress, baldcypress, and hemlock.

Soft hardwoods. Black and water tupelos, sweetgum, soft maple, yellow-poplar. The other soft hardwoods include sweetbay, cottonwood, willow, and southern magnolia.

Hard hardwoods. All of the oaks, hickories, and ash. Volumes shown for sycamore and birch also include river birch, beech, elm, honeylocust, and sycamore.

Volume Estimates

Board-foot volume. The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of saw-timber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords. For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. For cull trees similar volumes are included plus the volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of saw-timber size hardwoods.

Volume in cubic feet. Same as volume shown in cords except bark is not included.

International 1/4-inch log rule. A rule for estimating the board-foot volume of 4 foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord. A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, 90 cubic feet of softwoods (wood and bark) or 80 cubic feet of hardwoods (wood and bark).

Growth and Drain

Growing stock

Saw timber: The sawlog volume of all sound saw-timber size trees.

All timber: The cord or cubic-foot volume of the entire stem from stump to a minimum 4-inch diameter inside bark, of all sound trees 5.0 inches d.b.h. or larger. No limbs or cull trees included.

Net growth

Board foot: The change during the calendar year in the saw-timber growing stock resulting from tree growth and mortality losses. Includes the gains accruing from the growth of small trees into saw-timber sizes during the year.

Cord or cubic foot: The change during the calendar year in the stem volume of all sound trees 5.0 inches and larger resulting from tree growth and mortality losses. Includes the gains accruing from the growth of saplings into pole sizes during the year.

Mortality

Board foot: The net volume lost from the saw-timber growing stock during the calendar year by the death of individual trees through the normal action of fire, tree competition, disease, insects, drought, and wind. Catastrophic losses did not occur during the growth period.

Cord or cubic foot: The net volume lost from the all-timber growing stock during the calendar year by the death of individual trees through natural causes.

Commodity drain

Board foot: The net volume removed from the saw-timber growing stock through cutting of timber products and logging waste during the calendar year.

Cord or cubic foot: The net volume removed from the all-timber growing stock through cutting of timber products and logging waste during the calendar year.

RELIABILITY OF THE DATA

Forest area: In estimating the areas of various categories of land there are two possible sources of error: (1) errors in classifying field plots or in compiling the data, and (2) sampling errors. The first arise from mistakes of judgment or technic and can be minimized by the exercise of care and skill even though it is seldom possible to evaluate them. In this survey every effort was made to maintain a high order of accuracy in the collection and compilation of data. In the field this took the form of frequent checks and a continuous program of training. In the office the work was organized to permit automatic machine verification of most of the important operations.

Sampling errors (standard errors of estimate), on the other hand, carry no connotation of faulty work, but are theoretical measures of the reliability of estimates based on the variability exhibited by sample measurements. The sampling intensity was sufficient to provide an estimate of the forest acreage of the state with a standard error of ± 0.7 percent. This indicates the probabilities are two out of three that the actual forest area is within ± 0.7 percent of the value given, provided measurement and computing errors have introduced no bias.

Timber volumes: in estimating timber volumes, the possible sources of error include (1) and (2) above, and in addition, (3) inaccurate measurements of tree diameter, height, form, or cull, and (4) bias resulting from improper construction or use of tree volume tables. As in the case of area determinations, every effort was made to secure accurate measurements through frequent checks and training. The volume tables used also were checked and were found to give reasonably accurate figures. The standard error of estimate of the board-foot volume of saw timber in the state is ± 1.6 percent; a corresponding error for the total volume in cords was not computed, but it should be smaller.

Drain volumes: The principal sources of error in surveys to obtain timber drain estimates are: (1) reporting errors, (2) canvassing errors, (3) errors in compiling the data, and (4) sampling errors. Reporting, canvassing, and compilation errors were held to a minimum through the use of trained enumerators, check surveys of the original field data, and verification of all computations.

Sampling errors were the only measurable errors involved. The sampling error of cubic-foot estimates of the total state drain by commodity varied from ± 1.8 percent for lumber to ± 11.4 percent for fence posts, with a combined error for all products of ± 1.9 percent.

Use of county data: The tables showing area and timber volumes for individual counties are included to facilitate the grouping of counties in any desired combination. Statistics for individual counties have a standard error of estimate for forest area ranging from ± 0.9 to ± 14.7 percent, and for board-foot volume from ± 6.7 to ± 16.5 percent. Obviously, detailed comparisons between counties are subject to considerable error. Grouping a number of counties together will reduce the magnitude of the area error and volume error for the combined counties, and make these data sufficiently accurate for most purposes.

Drain estimates for all products except fuelwood and fence posts are reasonably accurate since no sampling errors are involved. Individual county estimates for fuelwood and fence posts may have sampling errors ranging from 35 to 70 percent.

FOREST SURVEY REPORTS PUBLISHED BY SOUTHEASTERN FOREST EXPERIMENT STATION

Forest Survey Releases

No. 1 - Forest Resources of the Northern Coastal Plain of South Carolina. 1939

No. 2 - Forest Resources of the Piedmont Region of South Carolina. 1939

No. 3 - Forest Resources of the Southern Coastal Plain of South Carolina. 1939

No. 4 - Forest Resources of the Southern Coastal Plain of North Carolina. 1940

No. 5 - Forest Resources of the Northern Coastal Plain of North Carolina. 1940

No. 6 - Forest Resources of the Piedmont Region of North Carolina. 1940

No. 7 - Forest Resources of the Mountain Region of North Carolina. 1941

No. 8 - The Distribution of Commercial Forest Trees in North Carolina. 1941

No. 9 - The Distribution of Commercial Forest Trees in South Carolina. 1941

No. 10 - The Distribution of Commercial Forest Trees in Virginia. 1942

No. 11 - Virginia's Forests. 1942

No. 12 - The Forest Situation in the Coastal Plain of Virginia. 1943

No. 13 - The Forest Situation in Piedmont Virginia. 1943

*No. 14 - Preliminary Estimate of 1942 Lumber Production in the Carolinas, Virginia, West Virginia, Kentucky, and Tennessee. 1943

*No. 15 - The Forest Situation in the Mountain Region of Virginia. 1943

*No. 16 - Wartime Lumber Production in the Appalachian Hardwood Region, January 1942-June 1944. 1944

No. 17 - Wood Waste Available for Conversion to Ethyl Alcohol in the Columbia Area of South Carolina. 1944

No. 18 - North Carolina Forest Growth and Drain, 1937-1943. 1945

No. 19 - Approximate Forest Area and Timber Volume by County in the Carolinas and Virginia. 1945

No. 20 - South Carolina Forest Growth and Drain, 1936-1943. 1945

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia. 1946

No. 22 - Southern Forests as a Source of Pulpwood. 1947

No. 23 - 1946 Pulpwood Production by County in the Southeast. 1947

No. 24 - Southern Pulpwood Production and the Timber Supply. 1948

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina. 1948

No. 26 - 1946 Commodity Drain by County from South Carolina Forests. 1948

No. 27 - 1947 Pulpwood Production by County in the Southeast. 1948

USDA Miscellaneous Publications

*No.533 - North Carolina Forest Resources and Industries. 1944

No.552 - South Carolina Forest Resources and Industries. 1944

*Out of print.

FOREST SURVEY RELEASE NO. 29 JUNE 1, 1949

1948 PULPWOOD PRODUCTION BY COUNTY IN THE SOUTHEAST

by

James W. Cruikshank, Chief
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FOREST SERVICE
U S
DEPARTMENT OF AGRICULTURE

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA

I.T. HAIG, Director

PREFACE

Through the McSweeny-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act, and each of the 11 Regional Forest Experiment Stations is responsible for the work in its territory. In the Southeastern States the Forest Survey is an activity in the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth. Determination of the current rate of timber growth.

3. Drain. Determination of the amount of industrial and domestic wood used, and the total loss resulting from fire, insects, disease, suppression, and other causes.

4. Requirements. Determination of the current and probable future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

This progress report summarizes information on the 1948 production of pulpwood obtained in the course of compiling forest drain statistics by states and survey units.

ACKNOWLEDGMENT

The production statistics contained in this release could not have been obtained without the help of all the pulp companies drawing wood from the southeastern states. The author gratefully acknowledges the generous assistance of the wood procurement officials who provided the information on pulpwood production by source. At the Southeastern Station James F. McCormack, Mrs. Christine Paxton, Miss Camilla Young, and Miss Priscilla Walker assisted in summarizing the individual company reports.

CONTENTS

Page

Text - 1

Figures:

1. Pulpwood production by county in the Southeast, 1948 - - - - - - - - ii.
2. Pulpwood production in the Southeast by states, 1948 - - - - - - - - 1
3. Pulp mills drawing wood from the Southeast, 1948 - - - - - - - - - - 3

Tables:

1. Pulpwood production in the Southeast by state and survey unit, 1948 2
2. Pulpwood production by county in Virginia, 1948 - - - - - - - - - - 4
3. Pulpwood production by county in North Carolina, 1948 - - - - - - - 6
4. Pulpwood production by county in South Carolina, 1948 - - - - - - - 8
5. Pulpwood production by county in Georgia, 1948 - - - - - - - - - - - 9
6. Pulpwood production by county in Florida, 1948 - - - - - - - - - - - 12

Companies drawing pulpwood from the Southeast, 1948 - - - - - - - - - - - 14

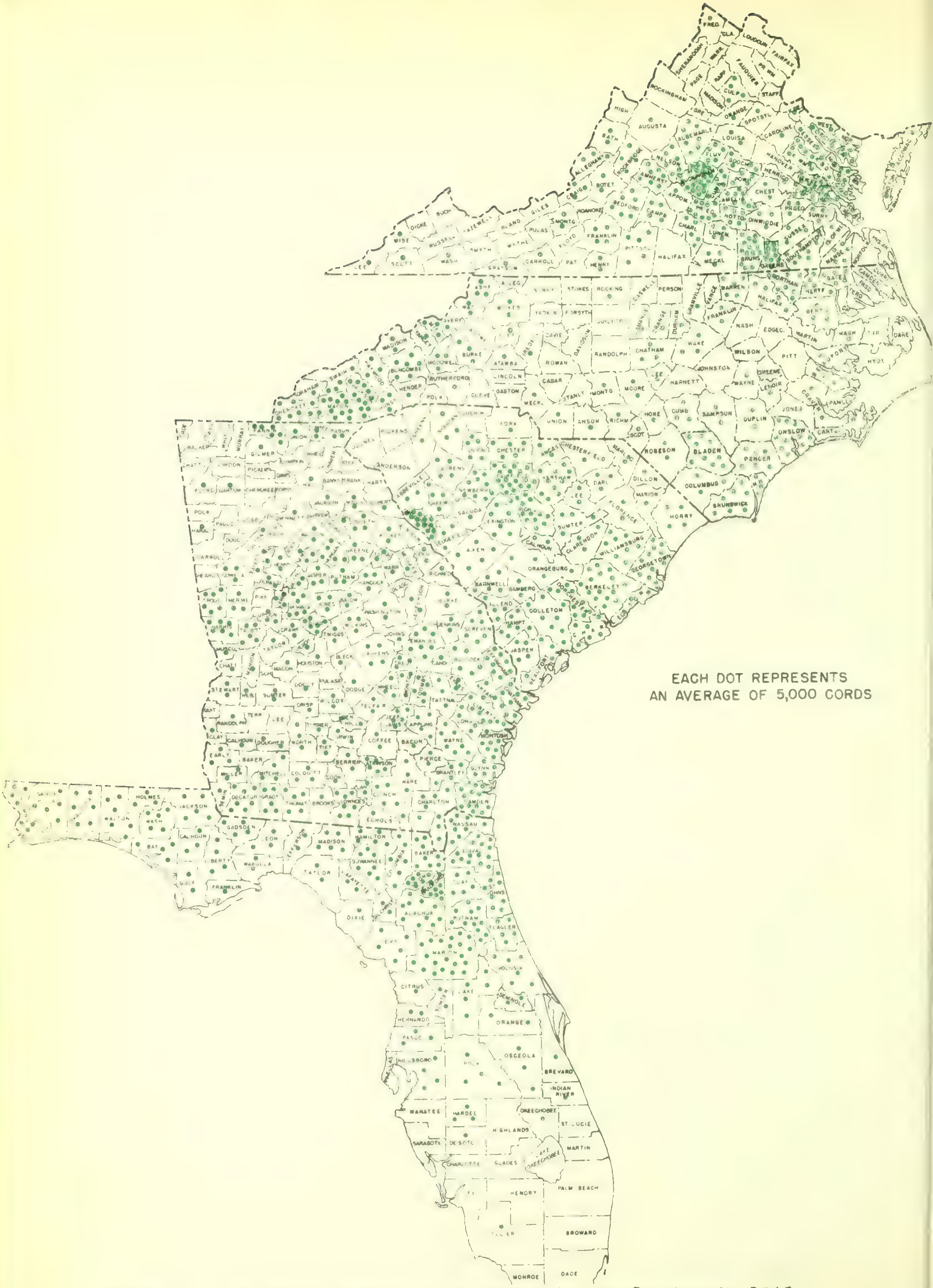

Figure 1. - Pulpwood production by county in the Southeast, 1948

1948 PULPWOOD PRODUCTION BY COUNTY IN THE SOUTHEAST

In 1948 total pulpwood production in the five states of the Southeast was 6.3 million cords, an all-time high. Production was 31 percent above 1947 and 34 percent above 1946. Softwoods accounted for 5,565,200 cords, or 88 percent of production; hardwoods for 486,800 cords, and chestnut for 281,000 cords. Production was greatest in Georgia, where 1,770,600 cords were harvested (fig. 2).

All volumes are reported in terms of the 128 cubic-foot standard cord. The softwood volume includes all of the southern yellow pines and a small amount of white pine. Most of the hardwood is blackgum and sweetgum, with the remainder chiefly soft maple, yellow-poplar, and various species of oak. The chestnut is practically all dead timber. Not included are 4,500 cords of slabs and 7,400 cords of veneer cores used for pulp.

These data are based upon reports obtained from the wood procurement officials representing 43 mills located in, or drawing wood from, the five states of the southeast. Reports showed either production by county or by shipping points which were used to assign production to counties. County data are approximate, but totals for small groups of counties should have little error.

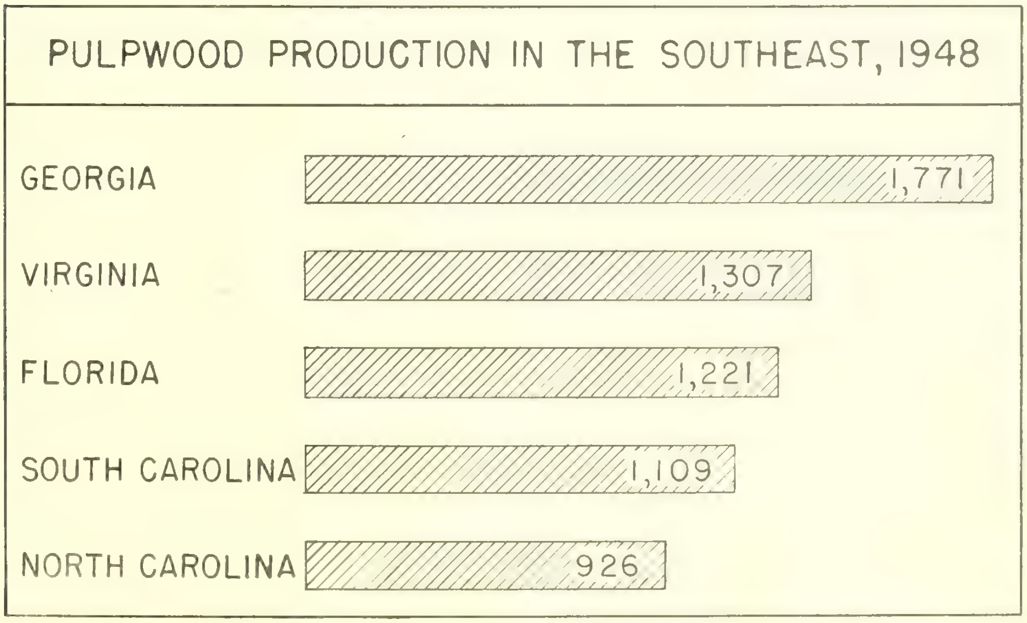

Figure 2

Table 1.--Pulpwood production in the Southeast by state and survey unit, 1948

State	Forest survey unit	Species group			Total
		Softwoods	Hardwoods	Chestnut 1/	
	Number	Std.cords	Std.cords	Std.cords	Std.cords
Virginia	2/ 1	527,121	25,762	--	552,883
	2	345,290	77,741	2,506	425,537
	3	117,674	60,762	11,635	190,071
	4	30,585	58,016	2,789	91,390
	5	5,427	9,999	31,202	46,628
	All units	1,026,097	232,280	48,132	1,306,509
North Carolina	1	268,407	9,904	--	278,311
	2	165,197	10,207	--	175,404
	3	118,281	7,099	550	125,930
	4	123,038	39,576	183,950	346,564
	All units	674,923	66,786	184,500	926,209
South Carolina	1	260,278	40,759	--	301,037
	2	396,421	48,469	--	444,890
	3	343,410	19,186	--	362,596
	All units	1,000,109	108,414	--	1,108,523
Georgia	1	695,559	61,277	--	756,836
	2	284,404	1,822	--	286,226
	3	445,445	12,111	--	457,556
	4	190,582	1,299	--	191,881
	5	28,087	1,625	48,389	78,101
	All units	1,644,077	78,134	48,389	1,770,600
Florida	1	722,716	1,001	--	723,717
	2	308,912	178	--	309,090
	3	179,225	13	--	179,238
	4	9,143	--	--	9,143
	All units	1,219,996	1,192	--	1,221,188
All states	Total	5,565,202	486,806	281,021	6,333,029

1/ Includes only chestnut used for pulp; an additional volume was used by plants for making only tanning extract.

2/ For location of survey units, see Figure 3.

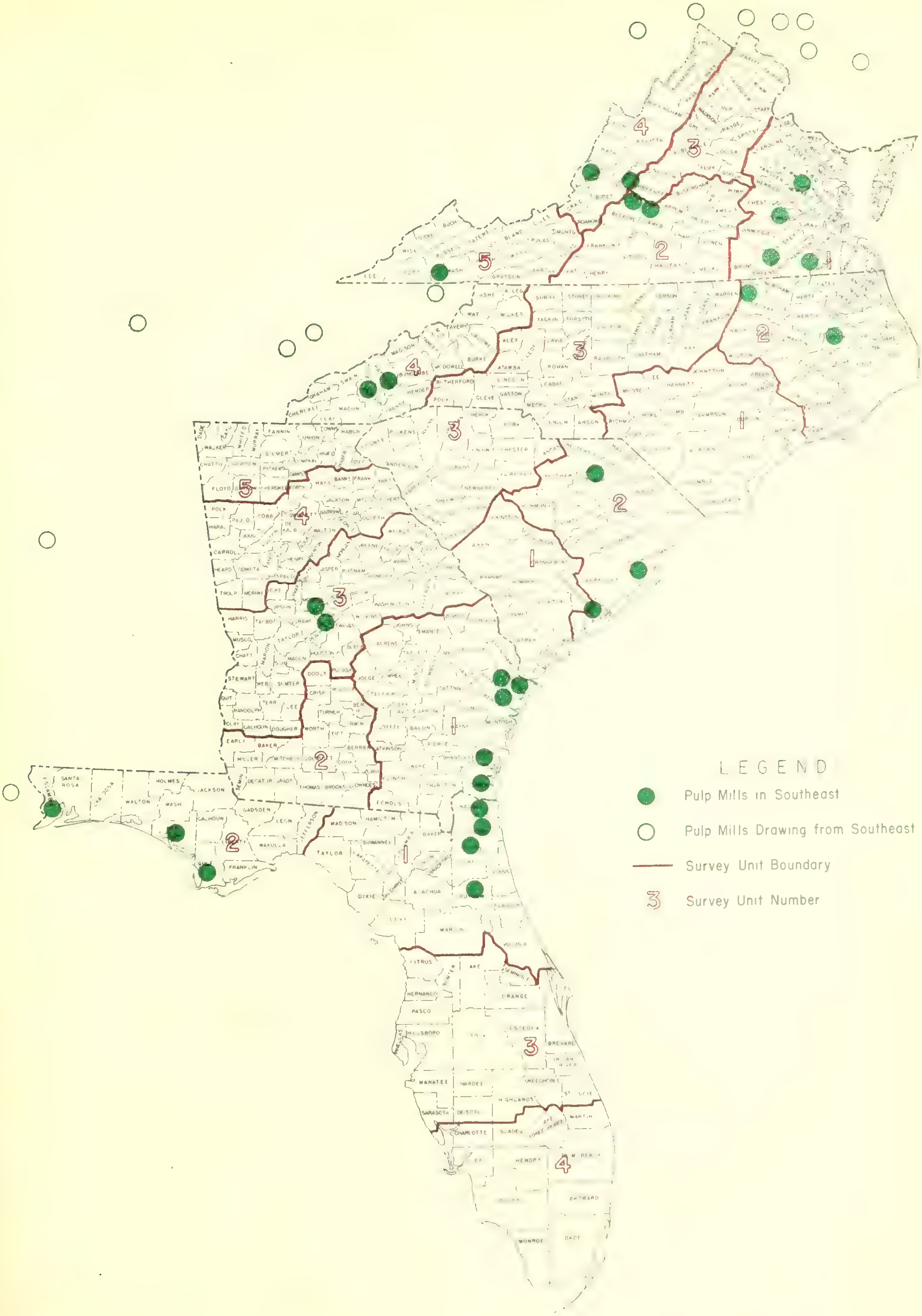
LEGEND
● Pulp Mills in Southeast
○ Pulp Mills Drawing from Southeast
Survey Unit Boundary
3 Survey Unit Number

Figure 3. - Forty-three mills were drawing pulpwood from the Southeast, 1948

Table 2.--Pulpwood production by county in Virginia, 1948

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Accomac	10,222	--	--	10,222
Albemarle	23,437	8,728	1,175	33,340
Alleghany	2,929	11,802	695	15,426
Amelia	36,415	2,913	--	39,328
Amherst	15,962	15,006	2,646	33,614
Appomattox	5,326	449	-	5,775
Arlington	--	--	--	--
Augusta	1,406	3,636	--	5,042
Bath	1,425	9,929	625	11,979
Bedford	21,782	6,767	2,300	30,849
Bland	--	--	--	--
Botetourt	3,508	5,444	969	9,921
Brunswick	65,827	4,199	--	70,026
Buchanan	--	--	--	--
Buckingham	61,139	42,299	156	103,594
Campbell	15,720	3,876	50	19,646
Caroline	4,735	158	--	4,893
Carroll	37	--	2,842	2,879
Charles City	29,456	124	--	29,580
Charlotte	19,822	2,740	--	22,562
Chesterfield	10,749	512	--	11,261
Clarke	144	23	--	167
Craig	4,397	9,424	500	14,321
Culpeper	12,027	5,553	2,969	20,549
Cumberland	25,404	3,816	--	29,220
Dickenson	-	--	1,031	1,031
Dinwiddie	13,793	483	--	14,276
Elizabeth City	214	--	--	214
Essex	10,438	--	--	10,438
Fairfax	256	19	--	275
Fauquier	1,285	145	--	1,430
Floyd	--	--	1,944	1,944
Fluvanna	15,507	8,833	--	24,340
Franklin	17,742	2,601	--	20,343
Frederick	5,720	1,031	--	6,751
Giles	16	4	56	76
Gloucester	25,150	--	--	25,150
Goochland	17,665	4,012	--	21,677
Grayson	138	826	1,994	2,958
Greene	604	123	--	727
Greensville	48,078	2,629	--	50,707
Halifax	288	--	--	288
Hanover	1,527	424	--	1,951
Henrico	2,960	296	--	3,256
Henry	11,379	32	--	11,411
Highland	152	1,348	--	1,500
Isle of Wight	2,718	987	--	3,705
James City	29,627	--	--	29,627
King and Queen	31,990	--	--	31,990
King George	2,501	90	--	2,591
King William	18,445	--	--	18,445

Table 2.--Virginia (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Lancaster	14,283	--	--	14,283
Lee	--	1,463	5,038	6,501
Loudoun	--	--	--	--
Louisa	6,333	3,597	--	9,930
Lunenburg	17,786	752	--	18,538
Madison	1,030	95	469	1,594
Mathews	4,646	--	--	4,646
Mecklenburg	13,921	243	--	14,164
Middlesex	14,695	--	--	14,695
Montgomery	4,731	5,897	625	11,253
Nansemond	16,672	9,970	--	26,642
Nelson	14,365	11,618	4,376	30,359
New Kent	27,983	2,373	--	30,356
Norfolk	456	9	--	465
Northampton	4,382	--	--	4,382
Northumberland	8,702	--	--	8,702
Nottoway	21,567	980	--	22,547
Orange	3,854	1,531		5,385
Page	734	68	--	802
Patrick	--	--	--	--
Pittsylvania	22,064	629	--	22,693
Powhatan	16,672	2,754	--	19,426
Prince Edward	38,263	6,890	--	45,153
Prince George	16,132	21	--	16,153
Prince William	753	--	--	753
Princess Anne	938	14	--	952
Pulaski	344	66	1,298	1,708
Rappahannock	73	--	--	73
Richmond	19,576	--	--	19,576
Roanoke	91	32	--	123
Rockbridge	7,518	14,591	--	22,109
Rockingham	1,086	78	--	1,164
Russell	--	--	662	662
Scott	--	1,463	5,290	6,753
Shenandoah	369	35	--	404
Smyth	--	74	2,160	2,234
Southampton	38,910	2,993	--	41,903
Spotsylvania	2,817	998	--	3,815
Stafford	1,706	504	--	2,210
Surry	12,686	5	--	12,691
Sussex	15,995	226	--	16,221
Tazewell	--	--	56	56
Warren	1,106	575	--	1,681
Warwick	7,059	249	--	7,308
Washington	--	150	2,612	2,762
Westmoreland	4,537	--	--	4,537
Wise	--	--	4,432	4,432
Wythe	161	56	1,162	1,379
York	11,039	--	--	11,039
All counties	1,026,097	232,280	48,132	1,306,509

Table 3.--Pulpwood production by county in North Carolina, 1948

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Alamance	4,482	69	--	4,551
Alexander	2,640	17	--	2,657
Alleghany	--		996	996
Anson	4,505	626	--	5,131
Ashe	3,000	4,659	6,761	14,420
Avery	--	2,100	4,858	6,958
Beaufort	12,985	65	--	13,050
Bertie	14,133	2,227	--	16,360
Bladen	41,424	1,962	--	43,386
Brunswick	33,408	1,672	--	35,080
Buncombe	23,667	1,745	5,796	31,208
Burke	12,573	188	15	12,776
Cabarrus	68	--	--	68
Caldwell	1,018	314	--	1,332
Camden	55	--	--	55
Carteret	16,499	36	--	16,535
Caswell		--	--	--
Catawba	4,266	16	--	4,282
Chatham	16,001	234	--	16,235
Cherokee	21,818	4,810	2,082	28,710
Chowan	2,468	--	--	2,468
Clay	7,196	1,224	3,922	12,342
Cleveland	47	--	--	47
Columbus	16,733	627	--	17,360
Craven	7,493	53	--	7,546
Cumberland	12,675	589	--	13,264
Currituck	12	--	--	12
Dare	--	--	--	--
Davidson	180	--	--	180
Davie	--	--	--	--
Duplin	7,598	670	--	8,268
Durham	3,335	111	--	3,446
Edgecombe	28	243	--	271
Forsyth	15	--	--	15
Franklin	7,843	300	--	8,143
Gaston	1,056	15	--	1,071
Gates	20,589	2.006	--	22,595
Graham	1,653	841	4,166	6.660
Granville	3,613	80	--	3,693
Greene	42	--	--	42
Guilford	19	--	--	19
Halifax	24,719	2,547	--	27,266
Harnett	1,838	15	--	1,853
Haywood	2,652	1,222	12,012	15,886
Henderson	3,489	452	369	4,310
Hertford	24,193	30	--	24,223
Hoke	5,761	5	--	5,766
Hyde	1,583	--	--	1,583
Iredell	2,312	224	--	2,536
Jackson	4,895	4,616	47,266	56,777

Table 3.--North Carolina (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Johnston	2,406	--	--	2,406
Jones	2,408	--	--	2,408
Lee	2,760	69	--	2,829
Lenoir	2,530	--	--	2,530
Lincoln	--	--		
Macon	4,690	3,123	40,441	48,254
Madison	2,147	1,217	8,316	11,680
Martin	1,054	--	--	1,054
McDowell	11,113	2,300	3,990	17,403
Mecklenberg	5,621	30	--	5,651
Mitchell	1,280	5,783	9,142	16,205
Montgomery	3,610	266	--	3,876
Moore	9,746	329	--	10,075
Nash	1,807	80	--	1,887
New Hanover	12,800	409	--	13,209
Northampton	33,165	2,089	--	35,254
Onslow	48,097	1,438	--	49,535
Orange	4,079	66	--	4,145
Pamlico	574		--	574
Pasquotank	56	--	--	56
Pender	27,473	1,022	--	28,495
Perquimans	630	--	--	630
Person	--	--	--	--
Pitt	32	--	--	32
Polk	755	235	31	1,021
Randolph	13	238	--	251
Richmond	8,333	322	--	8,655
Robeson	10,681	218	--	10,899
Rockingham	4,992	128	--	5,120
Rowan	404	19	--	423
Rutherford	4,757	383	20	5,160
Sampson	11,331	435	--	11,766
Scotland	7,375	88	--	7,463
Stanly	578	153	--	731
Stokes	36	--	--	36
Surry	1,314	--	499	1,813
Swain	5,496	2,411	13,902	21,809
Transylvania	2,849	1,453	11,101	15,403
Tyrrell	180	57	--	237
Union	2,784	739	--	3,523
Vance	1,871	110	--	1,981
Wake	12,414	586	--	13,000
Warren	24,307	2,454	--	26,761
Washington	2,775	774	--	3,549
Watauga	3,000	--	4,706	7,706
Wayne	2,988	34	--	3,022
Wilkes	10,405	228	1,329	11,962
Wilson	167	--	--	167
Yadkin	364	--	--	364
Yancey	97	890	2,780	3,767
All counties	674,923	66,786	184,500	926,209

Table 4.--Pulpwood production by county in South Carolina, 1948

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Abbeville	7,735	970	--	8,705
Aiken	26,094	871	--	26,965
Allendale	14.280	5,429	--	19,709
Anderson	1,233	--	--	1,233
Bamberg	4,698	4,131	--	8,829
Barnwell	22,477	3,310	--	25,787
Beaufort	21,825	252	--	22,077
Berkeley	71,889	3,542	--	75,431
Calhoun	8,712	991	--	9,703
Charleston	43,893	2,909	--	46,802
Cherokee	1,715	25	--	1,740
Chester	23,086	2,553	--	25,639
Chesterfield	4,626	2,536	--	7,162
Clarendon	13,779	3,657	--	17,436
Colleton	36,058	1,841	--	37,899
Darlington	12,695	1,249	--	13,944
Dillon	6,589	321	--	6,910
Dorchester	42,711	968	--	43,679
Edgefield	15,482	459	--	15,941
Fairfield	83,082	9,378	--	92,460
Florence	10,405	1,857	--	12,262
Georgetown	48,430	5,178	--	53,608
Greenville	6,888	51	--	6,939
Greenwood	19,619	347	--	19,966
Hampton	25,886	7,390	--	33,276
Horry	18,506	2,061	--	20,567
Jasper	16,813	1,509	--	18,322
Kershaw	43,623	6,209	--	49,832
Lancaster	9,123	1,082	--	10,205
Laurens	18,001	688	--	18,689
Lee	4,956	2,900	--	7,856
Lexington	24,400	8,054	--	32,454
Marion	1,869	1,854	--	3,723
Marlboro	4,094	2,900	--	6,994
McCormick	65,024	217	--	65,241
Newberry	42,402	1,473	--	43,875
Oconee	823	--	--	823
Orangeburg	16,324	6,013	--	22,337
Pickens	409	--	--	409
Richland	60,026	4,966	--	64,992
Saluda	5,396	661	--	6,057
Spartanburg	12,185	323	--	12,508
Sumter	16,214	2,204	--	18,418
Union	26,310	875	--	27,185
Williamsburg	34,827	4,126	--	38,953
York	4,897	84	--	4,981
All counties	1,000,109	108,414	--	1,108,523

Table 5.--Pulpwood production by county in Georgia, 1948

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std. cords	Std.cords	Std.cords	Std.cords
Appling	16,728	2,591	--	19,319
Atkinson	22,606	41	--	22,647
Bacon	4,143	105	--	4,248
Baker	--	--	--	--
Baldwin	11,999	32	--	12,031
Banks	738	--	--	738
Barrow	1,321	123	--	1,444
Bartow	2,724	--	--	2,724
Ben Hill	8,490	84	--	8,574
Berrien	8,951	173	--	9,124
Bibb	26,626	1,837	--	28,463
Bleckley	3,516	107	--	3,623
Brantley	17,462	3,584	--	21,046
Brooks	6,805	26	--	6,831
Bryan	31,906	481	--	32,387
Bulloch	26,726	140	--	26,866
Burke	9,074	106	--	9,180
Butts	8,009	--	--	8,009
Calhoun	6,296	--	--	6,296
Camden	57,198	8,552	--	65,750
Candler	7,152	301	--	7,453
Carroll	1,189	--	--	1,189
Catoosa	--	--	--	--
Charlton	34,268	336	--	34,604
Chatham	18,945	7,585	--	26,530
Chattahoochee	6,560	10	--	6,570
Chattooga	200	--	--	200
Cherokee	353	--	--	353
Clarke	2,842	90	--	2,932
Clay	5,580	30	--	5,610
Clayton	7,912	--	--	7,912
Clinch	25,537	123	--	25,660
Cobb	685	37	--	722
Coffee	10,537	201	--	10,738
Colquitt	13,136	42	--	13,178
Columbia	9,267	265	--	9,532
Cook	5,717	31	--	5,748
Coweta	17,399	--	--	17,399
Crawford	7,612	210	--	7,822
Crisp	6,779	355	--	7,134
Dade	266	33	--	299
Dawson	--	--	--	--
Decatur	35,653	23	--	35,676
De Kalb	1,062	--	--	1,062
Dodge	6,206	987	--	7,193
Dooly	3,951	490	--	4,441
Dougherty	11,917	--	--	11,917
Douglas	77	13	--	90
Early	14,615	36	--	14,651
Echols	3,783	1	--	3,784
Effingham	40,453	1,002	--	41,455
Elbert	6,320	139	--	6,459

Table 5.--Georgia (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std. cords	Std. cords	Std. cords	Std. cords
Emanuel	30,658	1,843	--	32,501
Evans	8,553	245	--	8,798
Fannin	9,066	1,348	20,726	31,140
Fayette	4,193	--	--	4,193
Floyd	3,504	15	--	3,519
Forsyth	--	--	--	--
Franklin	1,649	14	--	1,663
Fulton	5,127	65	--	5,192
Gilmer	3,361	48	474	3,883
Glascock	450	--	--	450
Glynn	12,201	7,718	--	19,919
Gordon	907	--	--	907
Grady	24,005	6	--	24,011
Greene	15,442	438	--	15,880
Gwinnett	6,192	40	--	6,232
Habersham	1,507	52	57	1,616
Hall	3,434	--	--	3,434
Hancock	12,784	609	--	13,393
Haralson	4,519	30	--	4,549
Harris	27,612	1,613	--	29,225
Hart	--	14	--	14
Heard	--	--	--	--
Henry	8,948	--	--	8,948
Houston	4,359	--	--	4,359
Irwin	8,741	99	--	8,840
Jackson	6,417	115	--	6,532
Jasper	14,428	--	--	14,428
Jeff Davis	24,936	131	--	25,067
Jefferson	9,020	208	--	9,228
Jenkins	8,322	58	--	8,380
Johnson	5,815	20	--	5,835
Jones	16,791	18	--	16,809
Lamar	13,488	10	--	13,498
Lanier	8,341	27	--	8,368
Laurens	21,583	719	--	22,302
Lee	745	--	--	745
Liberty	34,581	1,188	--	35,769
Lincoln	700	--	--	700
Long	16,157	4,107	--	20,264
Lowndes	36,839	28	--	36,867
Lumpkin	--	--	--	--
Macon	3,439	23	--	3,462
Madison	7,576	118	--	7,694
Marion	6,262	97	--	6,359
McDuffie	5,005	46	--	5,051
McIntosh	30,387	5,550	--	35,937
Meriwether	16,879	87	--	16,966
Miller	11,162	1	--	11,163
Mitchell	19,331	2	--	19,333
Monroe	26,818	823	--	27,641
Montgomery	11,761	1,704	--	13,465
Morgan	23,705	315	--	24,020
Murray	219	--	55	274
Muscogee	6,061	371	--	6,432

Table 5.--Georgia (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std. cords	Std. cords	Std. cords	Std. cords
Newton	16,062	25	--	16,087
Oconee	2,020	11	--	2,031
Oglethorpe	12,547	183	--	12,730
Paulding	335	--	--	335
Peach	2,809	65	--	2,874
Pickens	1,766	21	--	1,787
Pierce	9,080	444	--	9,524
Pike	906	115	--	1,021
Polk	2,019	46	--	2,065
Pulaski	700	--	--	700
Putnam	12,662	10	--	12,672
Quitman	962	37	--	999
Rabun	2,280	108	10,077	12,465
Randolph	6,728	30	--	6,758
Richmond	2,325	188	--	2,513
Rockdale	1,594	3	--	1,597
Schley	1,456	--	--	1,456
Screven	31,230	1,110	--	32,340
Seminole	5,563	--	--	5,563
Spalding	10,755	4	--	10,759
Stephens	1,715	--	--	1,715
Stewart	9,674	23	--	9,697
Sumter	12,330	--	--	12,330
Talbot	19,842	3,349	--	23,191
Taliaferro	9,079	42	--	9,121
Tattnall	14,846	1,006	--	15,852
Taylor	6,638	373	--	7,011
Telfair	9,770	2,628	--	12,398
Terrell	696	--	--	696
Thomas	25,345	40	--	25,385
Tift	11,900	106	--	12,006
Toombs	21,276	2,080	--	23,356
Towns	--	--	10,000	10,000
Treutlen	12,168	432	--	12,600
Troup	29,096	--	--	29,096
Turner	3,368	6	--	3,374
Twiggs	8,808	--	--	8,808
Union	--	--	7,000	7,000
Upson	14,884	488	--	15,372
Walker	174	--	--	174
Walton	11,675	142	--	11,817
Ware	19,470	76	--	19,546
Warren	4,089	4	--	4,093
Washington	12,468	16	--	12,484
Wayne	31,783	4,072	--	35,855
Webster	2,781	110	--	2,891
Wheeler	17,332	116	--	17,448
White	--	--	--	--
Whitfield	45	--	--	45
Wilcox	10,761	237	--	10,998
Wilkes	9,164	--	--	9,164
Wilkinson	12,879	93	--	12,972
Worth	14,951	10	--	14,961
All counties	1,644,077	78,134	48,389	1,770,600

Table 6.--Pulpwood production by county in Florida, 1948

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std.cords	Std.cords	Std.cords	Std.cords
Alachua	47,826	7	--	47,833
Baker	41,859	--	--	41,859
Bay	18,361	--	--	18,361
Bradford	43,577	32	--	43,609
Brevard	3,299	--	--	3,299
Broward	--	--	--	-
Calhoun	16,788	--	--	16,788
Charlotte	72	--	--	72
Citrus	5,071	--	--	5,071
Clay	25,102	25	--	25,127
Collier	5,915	--	--	5,915
Columbia	28,336	14	--	28,350
Dade	1,028	--	--	1,028
De Soto	2,871	--	--	2,871
Dixie	3,393	--	--	3,393
Duval	67,872	--	--	67,872
Escambia	40,075	--	--	40,075
Flagler	24,245	--	--	24,245
Franklin	4,830	--	--	4,830
Gadsden	19,063	29	--	19,092
Gilchrist	11,537	--	--	11,537
Glades	14	--	--	14
Gulf	9,951	--	--	9,951
Hamilton	23,911	--	--	23,911
Hardee	16,255	13	--	16,268
Hendry	35	--	--	35
Hernando	10,554	--	--	10,554
Highlands	1,692	--	--	1,692
Hillsborough	22,131	--	--	22,131
Holmes	15,546	--	--	15,546
Indian River	2,810	--	--	2,810
Jackson	25,016	--	--	25,016
Jefferson	8,639	87	--	8,726
Lafayette	11,204	--	--	11,204
Lake	25,036	--	--	25,036
Lee	2,064	--	--	2,064
Leon	12,804	32	--	12,836
Levy	23,664	288	--	23,952
Liberty	20,655	16	--	20,671
Madison	23,242	151	--	23,393
Manatee	2,176	--	--	2,176
Marion	105,223	181	--	105,404
Martin	15	--	--	15
Monroe	--	--	--	-
Nassau	41,511	--	--	41,511
Okaloosa	32,110	--	--	32,110
Okeechobee	2,557	--	--	2,557
Orange	11,579	--	--	11,579
Osceola	13,945	--	--	13,945
Palm Beach	--	--	--	
Pasco	12,538	--	--	12,538

Table 6.--Florida (cont.)

County	Species group			Total
	Softwoods	Hardwoods	Chestnut	
	Std. cords	Std. cords	Std. cords	Std. cords
Pinellas	1,258	--	--	1,258
Polk	21,707	--	--	21,707
Putnam	56,708	--	--	56,708
Saint Johns	39,797	--	--	39,797
Saint Lucie	--	--	--	--
Santa Rosa	24,060	--	--	24,060
Sarasota	149	--	--	149
Seminole	11,623	--	--	11,623
Sumter	11,974	--	--	11,974
Suwannee	33,079	153	--	33,232
Taylor	11,249	69	--	11,318
Union	29,524	81	--	29,605
Volusia	29,857	--	--	29,857
Wakulla	7,791	14	--	7,805
Walton	27,545	--	--	27,545
Washington	25,678	--	--	25,678
All counties	1,219,996	1,192	--	1,221,188

COMPANIES DRAWING PULPWOOD FROM THE SOUTHEAST, 1948

ALABAMA	Gulf States Paper Corp.	Tuscaloosa
	Hollingsworth & Whitney Co.	Mobile
FLORIDA	Container Corp. of America	Fernandina
	Hudson Pulp & Paper Co.	Palatka
	International Paper Co.	Panama City
	National Container Corp.	Jacksonville
	Rayonier, Inc.	Fernandina
	St. Joe Paper Co.	Port St. Joe
	St. Regis Paper Co.	Pensacola
GEORGIA	Armstrong Cork Co.	Macon
	Brunswick Pulp & Paper Co.	Brunswick
	Certain-teed Products Corp.	Savannah
	Gair Woodlands Corp.	Savannah
	Macon Kraft Corp.	Macon
	St. Marys Kraft Corp.	St. Marys
	Union Bag & Paper Corp.	Savannah
MARYLAND	Apex Wood Products Co.	Baltimore
	West Virginia Pulp & Paper Co.	Luke
NORTH CAROLINA	Champion Paper & Fibre Co.	Canton
	Halifax Paper Co.	Roanoke Rapids
	Mead Corp.	Sylva
	North Carolina Pulp Co.	Plymouth
PENNSYLVANIA	Armstrong Forest Co.	Johnsonburg
	Certain-teed Products Co.	York
	P. H. Glatfelter Co.	Spring Grove
	West Virginia Pulp & Paper Co.	Tyrone
	West Virginia Pulp & Paper Co.	Williamsburg
SOUTH CAROLINA	International Paper Co.	Georgetown
	Sonoco Products Co.	Hartsville
	West Virginia Pulp & Paper Co.	Charleston
TENNESSEE	Mead Corp.	Harriman
	Mead Corp.	Kingsport
	Mead Corp.	Nashville
	Southern Extract Co.	Knoxville
VIRGINIA	Camp Manufacturing Co.	Franklin
	Chesapeake Corp. of Virginia	West Point
	Columbian Paper Co.	Bristol
	Columbian Paper Co.	Buena Vista
	Continental Can Co., Inc.	Hopewell
	Mead Corp.	Lynchburg
	National Container Corp. of Virginia	Big Island
	Southern Johns-Manville Products Corp.	Jarratt
	West Virginia Pulp & Paper Co.	Covington

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No. 2 - Forest Resources of the Piedmont Region of South Carolina. 1939

No. 3 - Forest Resources of the Southern Coastal Plain of South Carolina. 1939

No. 4 - Forest Resources of the Southern Coastal Plain of North Carolina. 1940

No. 5 - Forest Resources of the Northern Coastal Plain of North Carolina. 1940

No. 6 - Forest Resources of the Piedmont Region of North Carolina. 1940

No. 7 - Forest Resources of the Mountain Region of North Carolina. 1941

No. 8 - The Distribution of Commercial Forest Trees in North Carolina. 1941

No. 9 - The Distribution of Commercial Forest Trees in South Carolina. 1941

No. 10 - The Distribution of Commercial Forest Trees in Virginia. 1942

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No.533 - North Carolina Forest Resources and Industries. 1944

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FOREST SURVEY RELEASE NO. 30

JUNE 15, 1949

FOREST RESOURCES OF NORTHEAST FLORIDA, 1949

by J. F. McCormack, Forester
Division of Forest Economics

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA
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In cooperation with
FLORIDA FOREST SERVICE
TALLAHASSEE, FLORIDA
C. H. COULTER, State Forester

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern States the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

The State of Florida was inventoried by the Forest Survey in the period 1934-36 and reports presenting the findings have been published. Since then, better forest management, more intensive forest use, changes in land use, and other factors have caused changes in the forest growing stock that can only be measured accurately by on-the-ground surveys. A resurvey of the forest resources of Florida is now under way. This progress report presents area and volume statistics of the resurvey in Northeastern Florida (Survey Unit No. 1). Statistical reports covering other portions of the State will be published in the near future. When complete statistical data are available, an analytical report will be prepared which will interpret these statistics and focus attention upon the principal forest problems and possible solutions.

ACKNOWLEDGMENTS

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The timber inventory work in the field was under the supervision of Mackay B. Bryan. Photo interpretation work was done by N. F. Force, R. C. Aldrich, and R. W. Cooper. Sample plot work was under the direction of Fritz Lorentzen, E. W. Vetter, M. W. McClure, W. A. McCarty, H. W. Allen, E. A. Schluter, Ben Jusky, and F. S. Hill.

Office compilation of the data was under the direction of Miss Agnes Creasman, assisted by Mrs. Christine Paxton, Miss Priscilla Walker, and Miss Camilla Young.

CONTENTS

Page

1949 FACTS AND SIGNIFICANT CHANGES - 1

TABLES FOR THE SURVEY UNIT, 1949

AREA

1. Gross area by broad use class - 3
2. Ownership of land - 4
3. Commercial forest area by forest type and stand size - - - - - - 5

NET VOLUME OF SAW TIMBER

4. By species and stand size - 6
5. By species and diameter class - 7
6. By forest type and stand size - 8

NET VOLUME OF ALL TREES (in thousand cords)

7. By species and stand size - 9
8. By species and diameter class - 10
9. By species and class of material - - - - - - - - - - - - - - - - - - 11
10. By forest type and stand size - 12

NET VOLUME OF POLE TIMBER TREES (in thousand cords)

11. By forest type and stand size - 13

NET VOLUME OF ALL TREES (in thousand cubic feet)

12. By species and diameter class - 14
13. By species and class of material - - - - - - - - - - - - - - - - - - 15

AVERAGE VOLUME PER ACRE

14. Of saw timber by forest type, species group, and stand size - - 16
15. Of all trees by forest type, species group, and stand size - - 17
16. Of pole timber by forest type, species group, and stand size - 18

NAVAL STORES

17. Number of turpentine trees by working status and tree size - - 19
18. Area of turpentine timber crops by working status - - - - - - - - 19
19. Area of stump land and tonnage of wood naval stores stumps - - 20

GENERAL

20. Number of trees by species group, quality class, and tree size 21
21. Area of poorly stocked stands by plantability class - - - - - - - 22
22. Commercial forest area by forest type and degree of stocking - 23

TABLES FOR COUNTIES, 1949

23. County area by broad use class - - - - - - - - - - - - - - - - - - 24
24. Ownership of commercial forest land - - - - - - - - - - - - - - - - 25
25. Net volume of saw timber by species group - - - - - - - - - - - - 26
26. Net volume of saw timber by broad species group and diameter class - 27
27. Net volume of all trees by pulping species groups and tree diameter groups - 28

DEFINITION OF TERMS - 29

RELIABILITY OF THE DATA - 34

HOW THE FOREST INVENTORY IS MADE - 35

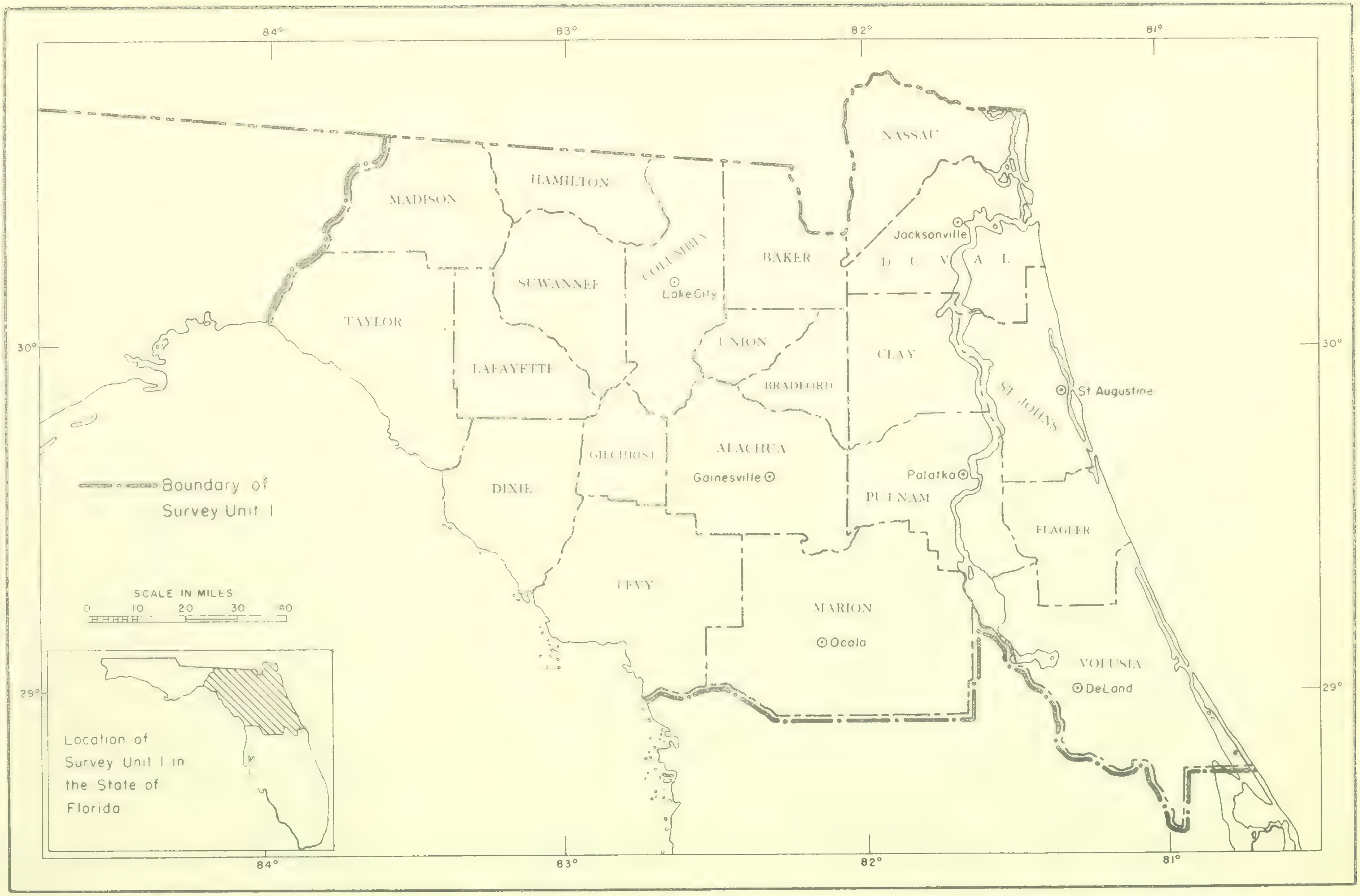

Figure 1. - Counties in Northeast Florida included in Survey Unit No. 1

FOREST RESOURCES OF NORTHEAST FLORIDA

A resurvey of the forest resources of the entire state of Florida was started in June 1948 and is still in progress. This report presents up-to-date facts on forest area and timber volumes in Northeast Florida (Survey Unit No. 1) as determined in the resurvey. By comparison with the original inventory, which was completed in 1934, the trends in forest area and timber supply can be evaluated.

1949 FACTS AND SIGNIFICANT CHANGES

Forest area increases slightly: At the time of the resurvey there were 7.7 million acres of forest land, of which 99 percent was classified as commercial. This amounted to approximately a one-percent increase in both the total forest acreage and in the commercial forest acreage since the original survey. Forests cover nearly 81 percent of the total land area of the Unit.

More forest land in hardwood types: Hardwood types occupy 2.1 million acres, or 28 percent, of the commercial forest area. Softwood types occupy 5.5 million acres, or 72 percent. During the past 14 years there has been an increase of 10 percent in the total hardwood type area and a corresponding decrease in the area of pine types. It was found that the area of lowland hardwood types increased 66 percent and the area in upland hardwood types increased 43 percent. The area in turpentine pine types decreased 16 percent and in non-turpentine pine types, 6 percent.

Saw-timber stands occupy 24 percent of forest land: Stands of saw timber containing 1,500 board feet or more per acre occupied 24 percent of the commercial forest land in 1949. Most of these stands fell in the small saw timber class (see definition of terms, page 30). Twenty percent supported stands of pole timber, 10 percent was in the seedling and sapling class, and 46 percent was covered lightly by scattered trees of various sizes. No direct comparisons of the forest area by stand class with the original survey are possible, since different standards were used on the resurvey.

Saw-timber volume decreases: The total volume of saw timber in 1949 was estimated to be 10.1 billion board feet, including 460 million board feet in 12-inch hardwoods, which were not considered saw timber in the original survey. Disregarding the 12-inch hardwoods, the 1949 volume was 9.6 billion board feet, a decrease of 14 percent from 1934.

Table A.--Change in volume of saw timber, 1934 to 1949

Species group	1934	1949	Change
	Thousand bd. ft.	Thousand bd. ft.	Percent
Pines	6,495,700	6,639,100	+ 2
Hardwoods[1/]	2,645,300	1,309,700	- 50
Cypress[2/]	2,017,800	1,655,200	- 18
All species	11,158,800	9,604,000	- 14

[1/] Excludes volume of hardwoods 12 inches d.b.h.

[2/] Includes volume of white cedar.

Total sound-tree volume decreases: The net cubic-foot volume of all sound trees 5.0 inches d.b.h. and larger dropped from 3.8 billion cubic feet in 1934 to 3.4 billion in 1949, a decrease of 11 percent.

The volume of sound wood in cull trees of all species groups increased. In 1949, approximately one-fourth of the total volume of wood was in cull trees as compared to 12 percent in 1934. Including scrub oak and noncommercial species, 57 percent of the total hardwood volume was classed as cull material.

Table B.--Change in volume of all trees 5.0 inches d.b.h. and larger, 1934 to 1949

Species group	Sound tree volume			Cull tree volume		
	1934	1949	Change	1934	1949	Change
	Million cu. ft.	Million cu. ft.	Percent	Million cu. ft.	Million cu. ft.	Percent
Pines[1/]	2,106	2,060	2	16	50	+ 212
Hardwoods[2/]	1,063	799	25	452	1,051	+ 133
Cypress	680	579	15	38	63	+ 66
All species	3,849	3,438	11	506	1,164	+ 130

1/ Excluding turpentine butts.

2/ Excluding volume in limbs.

Area in working turpentine crops decreases: In 1949 there were 484,900 acres in working turpentine timber crops, a decrease of 65 percent since 1934. The number of turpentine trees being worked decreased from 21 million in 1934 to 10 million in 1949. There were 50 million round turpentine pines 9.0 inches d.b.h. and larger available for gum production in 1949. This is nearly double the number available at the time of the original survey.

Nearly two-thirds of the forest land is understocked: Resurvey data indicate that 2.6 million acres of the commercial forest land were less than 10 percent stocked with sound trees of commercial species. There are also 2.2 million acres which were from 10 to 39 percent stocked with an adequate number of sound trees. This area of 4.8 million acres, which is less than 40 percent stocked, amounts to 64 percent of the total commercial forest acreage. In the pine types, stands of longleaf pine and pond pine have over 80 percent of their area in a poorly stocked condition. The cypress and lowland hardwood types are in better condition from a stocking standpoint, since only about 30 percent of the area is less than 40 percent stocked with sound trees.

Table 1.--Gross area[1] by broad use class, 1949

Class of use	Area	
	Acres	Percent
Forest land:		
Commercial	7,601,700	75.9
Reserved	6,100	0.1
Non-productive	85,900	0.8
Total forest	7,693,700	76.8
Non-forest land:		
Agricultural - active	869,500	8.7
Agricultural - idle	415,700	4.1
Marsh	290,700	2.9
Dunes and beaches	29,600	0.3
Urban and other[2]	226,400	2.3
Total non-forest	1,831,900	18.3
Total land area	9,525,600	95.1
Total water area	491,700	4.9
All classes	10,017,300	100.0

1/ From U. S. Bureau of the Census, 1940.

2/ Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

Table 2.--Ownership of land, 1949

Class of ownership	All land		Commercial forest land	
	Acres	Percent	Acres	Percent
Public land:				
National forest	439,800	4.6	417,300	5.5
Indian	--	--	--	--
Other federal	92,900	1.0	69,400	0.9
Total federal	532,700	5.6	486,700	6.4
State	134,300	1.4	70,500	0.9
County and municipal	23,100	0.2	7,700	0.1
Total public	690,100	7.2	564,900	7.4
Private land	8,835,500	92.8	7,036,800	92.6
All classes	9,525,600	100.0	7,601,700	100.0

Table 3.--Commercial forest area by forest type and stand size, 1949

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	5,200	270,400	544,900	61,300	1,370,100	2,251,900
Slash pine	25,000	605,900	340,500	252,200	708,600	1,932,200
Loblolly pine	17,800	67,800	52,300	43,800	82,100	263,800
Pond pine	3,300	39,600	42,000	35,000	96,700	216,600
Sand pine	---	15,600	57,800	129,700	26,400	229,500
Cypress	8,500	290,700	124,200	66,900	118,500	608 800
All softwd. types	59,800	1,290,000	1,161,700	588,900	2,402,400	5,502,800
Lowland hardwoods	80,500	351,700	295,500	160,500	203,000	1,091,200
Upland hardwoods	700	3,100	50,500	33,400	181,900	269,600
Scrub oak	---	---	---	---	727,400	727,400
All hardwd. types	81,200	354,800	346,000	193,900	1,112,300	2,088,200
Palm	---	---	---	---	10,700	10,700
All types	141,000	1,644,800	1,507,700	782,800	3,525,400	7,601,700
Percent	1.9	21.6	19.8	10.3	46.4	100.0

1/ See description of forest types and stand size classes in appendix.

Table 4.--Net volume[1] of saw timber by species and stand size, 1949

(in thousand board feet)

Species[2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	10,900	1,025,200	506,800	44,300	409,500	1,996,700
Slash pine	215,100	2,552,300	401,700	155,400	330,900	3,655,400
Loblolly pine	101,500	422,000	56,700	22,800	20,700	623,700
Pond pine	10,600	126,400	35,800	10,600	59,200	242,600
Other pines	17,700	71,200	13,300	6,000	12,500	120,700
Total	355,800	4,197,100	1,014,300	239,100	832,800	6,639,100
Cypress	48,200	1,325,700	157,100	33,900	78,500	1,643,400
Cedar	—	400	2,600	—	8,800	11,800
Total sftwds.	404,000	5,523,200	1,174,000	273,000	920,100	8,294,300
Hardwoods:						
Tupelo	126,500	434,300	69,300	43,800	10,800	684,700
Sweetgum	56,800	168,900	22,800	10,300	7,800	266,600
Soft maple	13,100	64,500	4,300	600	1,100	83,600
Other soft hdwds.	29,000	102,300	20,900	2,200	17,000	171,400
Total	225,400	770,000	117,300	56,900	36,700	1,206,300
Red oaks	44,300	170,100	39,300	27,200	26,600	307,500
White oaks	20,700	18,000	9,500	10,100	13,500	71,800
Hickory	5,700	36,200	9,300	1,600	1,300	54,100
Ash	8,800	45,300	19,800	2,600	2,600	79,100
Other hard hdwds.	9,200	24,100	11,300	2,100	4,000	50,700
Total	88,700	293,700	89,200	43,600	48,000	563,200
Total hdwds.	314,100	1,063,700	206,500	100,500	84,700	1,769,500
All species	718,100	6,586,900	1,380,500	373,500	1,004,800	10,063,800
Percent	7.1	65.5	13.7	3.7	10.0	100.0

[1] Log scale, International 1/4-inch rule.

[2] See appendix for species combined with others.

Table 5.--Net volume[1] of saw timber by species and diameter class, 1949

Species	10-12 inches[2]	14-18 inches	20-24 inches	26 + inches	All diameters	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Softwoods:						
Longleaf pine	1,657,100	336,600	3,000	-	1,996,700	19.9
Slash pine	2,398,900	1,191,200	65,300	--	3,655,400	36.3
Loblolly pine	185,200	369,000	58,200	11,300	623,700	6.2
Pond pine	123,400	115,500	3,700	--	242,600	2.4
Other pines	72,700	48,000	--	-	120,700	1.2
Total	4,437,300	2,060,300	130,200	11,300	6,639,100	66.0
Cypress	1,167,700	443,100	13,500	19,100	1,643,400	16.3
Cedar	4,400	2,400	5,000	-	11,800	0.1
Total sftwds.	5,609,400	2,505,800	148,700	30,400	8,294,300	82.4
Hardwoods:						
Tupelo	205,700	358,800	109,500	10,700	684,700	6.8
Sweetgum	54,800	157,400	43,200	11,200	266,600	2.7
Soft maple	24,300	43,300	16,000	--	83,600	0.8
Other soft hdwds.	40,600	106,500	24,300	--	171,400	1.7
Total	325,400	666,000	193,000	21,900	1,206,300	12.0
Red oaks	61,100	148,800	60,500	37,100	307,500	3.1
White oaks	18,300	28,200	19,500	5,800	71,800	0.7
Hickory	13,600	30,000	6,100	4,400	54,100	0.5
Ash	27,400	42,100	9,600	--	79,100	0.8
Other hard hdwds.	14,000	32,200	4,500	--	50,700	0.5
Total	134,400	281,300	100,200	47,300	563,200	5.6
Total hdwds.	459,800	947,300	293,200	69,200	1,769,500	17.6
All species	6,069,200	3,453,100	441,900	99,600	10,063,800	100.0
Percent	60.3	34.3	4.4	1.0	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included.

Table 6.--Net volume[1] of saw timber by forest type and stand size, 1949

(in thousand board feet)

Forest type[2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	19,200	954,900	521,100	12,800	373,200	1,881,200
Slash pine	169,800	2,468,800	316,800	150,600	313,000	3,419,000
Loblolly pine	135,100	411,800	16,600	26,400	6,400	596,300
Pond pine	10,600	123,800	31,700	21,400	45,200	232,700
Sand pine	---	44,100	11,700	---	10,400	66,200
Cypress	36,000	1,449,000	154,700	27,400	74,700	1,741,800
All sftwd. types	370,700	5,452,400	1,052,600	238,600	822,900	7,937,200
Lowland hdwds.	344,300	1,132,400	308,400	118,200	102,900	2,006,200
Upland hdwds.	3,100	2,100	19,500	16,700	37,600	79,000
Scrub oak	---	---	---	---	41,400	41,400
All hdwd. types	347,400	1,134,500	327,900	134,900	181,900	2,126,600
All types	718,100	6,586,900	1,380,500	373,500	1,004,800	10,063,800
Percent	7.1	65.5	13.7	3.7	10.0	100.0

[1] Log scale, International 1/4-inch rule.

[2] See description of forest types and stand-size classes in appendix.

Table 7.--Net volume1/ of all trees by species and stand size, 1949

SOUND TREES (in thousand cords)

Species	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	26	4,050	3,562	208	2,369	10,215
Slash pine	553	9,531	2,959	680	1,326	15,049
Loblolly pine	254	1,167	289	161	72	1,943
Pond pine	28	429	221	94	202	974
Other pines	44	226	409	59	37	775
Total	905	15,403	7,440	1,202	4,006	28,956
Cypress	140	5,530	1,266	150	323	7,409
Cedar	--	1	18	--	32	51
Total sftwds.	1,045	20,934	8,724	1,352	4,361	36,416
Hardwoods:						
Tupelo	413	2,679	971	234	81	4,378
Sweetgum	197	738	394	108	61	1,498
Soft maple	109	421	123	62	17	732
Other soft hdwds.	130	474	252	18	79	953
Total	849	4,312	1,740	422	238	7,561
Red oaks	149	844	439	120	137	1,689
White oaks	60	89	91	51	104	395
Hickory	36	154	94	12	12	308
Ash	43	384	321	17	40	805
Holly, dogwood	3	23	24	13	4	67
Other hard hdwds.	39	157	118	25	63	402
Total	330	1,651	1,087	238	360	3,666
Total hdwds.	1,179	5,963	2,827	660	598	11,227
All species	2,224	26,897	11,551	2,012	4,959	47,643
Percent	4.7	56.5	24.2	4.2	10.4	100.0

TREES OF OTHER QUALITY CLASSES (in thousand cords)

Rough culls						
Softwoods	11	361	267	62	188	889
Hardwoods2/	528	2,821	1,776	734	3,772	9,631
Rotten culls	526	2,603	1,461	644	940	6,174
Palms	293	1,037	573	463	1,709	4,075
All other classes	1,358	6,822	4,077	1,903	6,609	20,769

1/ Sound wood and bark.

2/ Includes scrub oak and noncommercial species.

Table 8.--Net volume[1/] of all trees by species and diameter class, 1949

SOUND TREES (in thousand cords)

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20 + inches	
Softwoods:							
Longleaf pine	1,768	2,888	3,079	1,645	828	7	10,215
Slash pine	2,246	2,755	3,716	3,232	2,958	142	15,049
Loblolly pine	139	232	239	286	897	150	1,943
Pond pine	120	225	125	216	280	8	974
Other pines	261	190	88	118	118	--	775
Total	4,534	6,290	7,247	5,497	5,081	307	28,956
Cypress	1,385	1,901	1,624	1,426	1,010	63	7,409
Cedar	--	25	11	--	5	10	51
Total sftwds.	5,919	8,216	8,882	6,923	6,096	380	36,416
Hardwoods:							
Tupelo	815	801	879	613	967	303	4,378
Sweetgum	376	205	204	166	414	133	1,498
Soft maple	183	151	165	75	118	40	732
Other soft hdwds.	119	177	177	121	296	63	953
Total	1,493	1,334	1,425	975	1,795	539	7,561
Red oaks	266	326	255	182	410	250	1,689
White oaks	33	73	104	52	71	62	395
Hickory	41	46	72	42	80	27	308
Ash	239	181	168	83	110	24	805
Holly, dogwood	34	18	12	3	--	--	67
Other hard hdwds.	58	81	131	41	80	11	402
Total	671	725	742	403	751	374	3,666
Total hdwds.	2,164	2,059	2,167	1,378	2,546	913	11,227
All species	8,083	10,275	11,049	8,301	8,642	1,293	47,643
Percent	17.0	21.6	23.2	17.4	18.1	2.7	100.0

TREES OF OTHER QUALITY CLASSES (in thousand cords)

Rough culls							
Softwoods	214	182	202	88	153	50	889
Hardwoods[2/]	1,993	1,687	1,578	1,122	2,224	1,027	9,631
Rotten culls	398	571	581	623	1,578	2,423	6,174
Palms	4	205	1,412	1,972	482	--	4,075
All other classes	2,609	2,645	3,773	3,805	4,437	3,500	20,769

1/ Sound wood and bark.

2/ Includes scrub oak and noncommercial species.

Table 9.--Net volume[1] of all trees by species and class of material, 1949

(in thousand cords)

Species	SOUND TREES				CULL TREES	
	Saw-timber trees		Pole timber trees	Total sound trees	Rough	Rotten
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	4,571	988	4,656	10,215	63	15
Slash pine	8,123	1,925	5,001	15,049	189	47
Loblolly pine	1,247	325	371	1,943	132	24
Pond pine	516	113	345	974	85	33
Other pines	266	58	451	775	82	9
Total	14,723	3,409	10,824	28,956	551	128
Cypress	3,262	861	3,286	7,409	338	439
Cedar	21	5	25	51	--	10
Total sftwds.	18,006	4,275	14,135	36,416	889	577
Hardwoods:						
Tupelo	1,527	356	2,495	4,378	1,291	1,139
Sweetgum	574	139	785	1,498	413	334
Soft maple	185	48	499	732	489	533
Other soft hdwds.	396	84	473	953	541	440
Total	2,682	627	4,252	7,561	2,734	2,446
Red oaks	696	146	847	1,689	1,237	1,499
White oaks	150	35	210	395	1,637	1,018
Hickory	120	29	159	308	165	102
Ash	178	39	588	805	464	416
Holly, dogwood	3	--	64	67	7	4
Scrub oak[2]	--	--	--	--	3,158	--
Other hard hdwds.	106	26	270	402	229	112
Total	1,253	275	2,138	3,666	6,897	3,151
Total hdwds.	3,935	902	6,390	11,227	9,631	5,597
All species	21,941	5,177	20,525	47,643	10,520	6,174
Percent	46.0	10.9	43.1	100.0	63.0	37.0

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[1] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

[2] Includes noncommercial species.

Table 10.--Net volume[1] of all trees by forest type and stand size, 1949

SOUND TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	54	3,836	3,573	86	2,188	9,737
Slash pine	531	9,616	2,803	704	1,408	15,062
Loblolly pine	369	1,291	193	183	19	2,055
Pond pine	28	440	174	69	160	871
Sand pine	—	153	403	41	28	625
Cypress	120	6,351	1,409	109	310	8,299
All softwd. types	1,102	21,687	8,555	1,192	4,113	36,649
Lowland hdwds.	1,114	5,195	2,851	758	501	10,419
Upland hdwds.	8	15	145	62	165	395
Scrub oak	—	—	—	—	180	180
All hdwd. types	1,122	5,210	2,996	820	846	10,994
All types	2,224	26,897	11,551	2,012	4,959	47,643
Percent	4.7	56.5	24.2	4.2	10.4	100.0

ROUGH AND ROTTEN CULLS (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	5	66	221	—	761	1,053
Slash pine	85	727	347	59	266	1,484
Loblolly pine	109	288	144	165	200	906
Pond pine	11	61	22	15	12	121
Sand pine	—	14	57	—	9	80
Cypress	27	868	185	38	174	1,292
All softwd. types	237	2,024	976	277	1,422	4,936
Lowland hdwds.	828	3,714	2,244	952	1,189	8,927
Upland hdwds.[2]	—	47	284	211	684	1,226
Scrub oak	—	—	—	—	1,605	1,605
All hdwd. types	828	3,761	2,528	1,163	3,478	11,758
All types	1,065	5,785	3,504	1,440	4,900	16,694
Percent	6.4	34.7	21.0	8.6	29.3	100.0

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[1] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

[2] Includes 1,000 cords in palm type.

Table 11.--Net volume[1/] of pole timber trees by forest type and stand size, 1949

SOUND TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	10	1,190	2,100	52	1,177	4,529
Slash pine	113	2,755	1,924	296	564	5,652
Loblolly pine	47	230	147	113	3	540
Pond pine	--	112	95	14	39	260
Sand pine	--	29	368	41	--	438
Cypress	33	2,593	992	38	127	3,783
All sftwd. types	203	6,909	5,626	554	1,910	15,202
Lowland hdwds.	239	2,131	2,026	451	223	5,070
Upland hdwds.	1	9	90	17	68	185
Scrub oak	--	--	--	--	68	68
All hdwd. types	240	2,140	2,116	468	359	5,323
All types	443	9,049	7,742	1,022	2,269	20,525
Percent	2.2	44.1	37.7	5.0	11.0	100.0

ROUGH AND ROTTEN CULLS (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	3	35	151	--	[illegible]	618
Slash pine	32	309	197	30	146	714
Loblolly pine	47	114	85	62	19	327
Pond pine	5	28	20	--	2	55
Sand pine	--	6	46	--	--	52
Cypress	11	446	142	12	112	723
All sftwd. types	98	938	641	104	708	2,489
Lowland hdwds.	142	1,067	887	363	379	2,838
Upland hdwds.[2/]	--	7	189	70	341	607
Scrub oak	--	--	--	--	1,185	1,185
All hdwd. types	142	1,074	1,076	433	1,905	4,630
All types	240	2,012	1,717	537	2,613	7,119
Percent	3.4	28.3	24.1	7.5	36.7	100.0

[1/] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

[2/] Includes 1,000 cords in palm type.

Table 12. -Net volume[1] of all trees by species and diameter class, 1949

SOUND TREES (in thousand cubic feet)

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20 + inches	
Softwoods:							
Longleaf pine	103,795	193,376	222,346	124,902	65,955	581	710,955
Slash pine	132,138	185,224	268,704	244,174	235,302	12,024	1,077,566
Loblolly pine	8,224	15,802	17,276	21,640	71,439	12,558	146,939
Pond pine	7,075	15,363	9,099	16,413	22,619	684	71,253
Other pines	15,425	12,850	6,389	9,058	9,246	--	52,968
Total	266,657	422,615	523,814	416,187	404,561	25,847	2,059,681
Cypress	90,917	140,484	128,895	120,116	88,228	6,138	574,778
Cedar	—	1,944	909	451	902	—	4,206
Total sftwds.	357,574	565,043	653,618	536,754	493,691	31,985	2,638,665
Hardwoods:							
Tupelo	49,460	52,811	60,964	46,675	76,362	24,844	311,116
Sweetgum	22,804	13,823	14,237	12,272	32,737	10,932	106,805
Soft maple	10,968	10,020	11,741	5,583	9,029	3,285	50,626
Other soft hdwds.	7,203	12,213	12,464	9,625	23,431	5,086	70,022
Total	90,435	88,867	99,406	74,155	141,559	44,147	538,569
Red oaks	15,999	21,708	17,490	14,169	32,634	20,435	122,435
White oaks	1,946	4,937	7,074	3,890	5,651	5,085	28,583
Hickory	2,380	3,205	4,907	3,095	6,258	2,213	22,058
Ash	14,338	12,139	11,525	6,217	8,819	1,886	54,924
Holly, dogwood	1,999	1,293	784	209	—	—	4,285
Other hard hdwds.	3,554	5,655	8,692	3,015	6,307	891	28,114
Total	40,216	48,937	50,472	30,595	59,669	30,510	260,399
Total hdwds.	130,651	137,804	149,878	104,750	201,228	74,657	798,968
All species	488,225	702,847	803,496	641,504	694,919	106,642	3,437,633
Percent	14.2	20.4	23.4	18.7	20.2	3.1	100.0

TREES OF OTHER QUALITY CLASSES (in thousand cubic feet)

Rough culls							
Softwoods	13,483	13,209	15,794	7,072	12,430	4,404	66,392
Hardwoods[2]	120,881	111,775	109,587	83,460	176,312	83,822	685,837
Rotten culls	24,234	36,549	42,198	46,743	128,547	199,980	478,251
Palms	406	20,319	142,442	202,902	51,133		417,202
All other classes	159,004	181,852	310,021	340,177	368,422	288,206	1,647,682

1/ Excluding bark.

2/ Includes scrub oak and noncommercial species.

Table 13.--Net volume[1] of all trees by species and class of material, 1949

(in thousand cubic feet)

Species	SOUND TREES				CULL TREES	
	Saw-timber trees		Pole timber trees	Total sound trees	Rough	Rotten
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	344,873	68,911	297,171	710,955	4,693	1,072
Slash pine	623,717	136,487	317,362	1,077,566	13,736	3,280
Loblolly pine	99,230	23,683	24,026	146,939	10,365	1,585
Pond pine	39,803	9,012	22,438	71,253	6,036	2,739
Other pines	20,110	4,583	28,275	52,968	5,612	513
Total	1,127,733	242,676	689,272	2,059,681	40,442	9,189
Cypress	281,853	61,524	231,401	574,778	25,950	36,559
Cedar	1,820	442	1,944	4,206	--	873
Total sftwds.	1,411,406	304,642	922,617	2,638,665	66,392	46,621
Hardwoods:						
Tupelo	121,767	26,114	163,235	311,116	91,914	85,269
Sweetgum	45,844	10,097	50,864	106,805	30,121	25,804
Soft maple	14,760	3,137	32,729	50,626	34,786	41,176
Other soft hdwds.	31,697	6,445	31,880	70,022	40,738	33,642
Total	214,068	45,793	278,708	538,569	197,559	185,891
Red oaks	55,905	11,333	55,197	122,435	91,681	117,683
White oaks	11,912	2,714	13,957	28,583	121,493	80,425
Hickory	9,537	2,029	10,492	22,058	12,488	8,056
Ash	13,866	3,056	38,002	54,924	31,545	31,052
Holly, dogwood	209	--	4,076	4,285	479	264
Scrub oak[2]	--	--	--	--	214,405	--
Other hard hdwds.	8,287	1,926	17,901	28,114	16,187	8,259
Total	99,716	21,058	139,625	260,399	488,278	245,739
Total hdwds.	313,784	66,851	418,333	798,968	685,837	431,630
All species	1,725,190	371,493	1,340,950	3,437,633	752,229	478,251
Percent	50.2	10.8	39.0	100.0	61.1	38.9

[1] Excluding bark and volume of palms shown in table 12.

[2] Includes noncommercial species.

Table 14.--Average volume[1] per acre of saw timber by forest type, species group, an stand size, 1949

(in board feet)

Forest type and species group	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine						
Softwood	3,692	3,522	946	208	272	832
Hardwood	--	10	10	--	--	4
Slash pine						
Softwood	5,990	4,034	889	597	437	1,738
Hardwood	799	403	41	--	5	32
Loblolly pine						
Softwood	6,568	5,594	261	303	77	2,007
Hardwood	1,033	475	58	300	--	253
Pond pine						
Softwood	3,195	3,056	755	611	467	1,061
Hardwood	--	72	--	--	--	13
Sand pine						
Softwood	--	2,833	202	--	395	289
Hardwood	--	--	--	--	--	--
Cypress						
Softwood	3,406	4,695	1,242	385	604	2,703
Hardwood	838	289	3	24	27	158
Lowland hardwoods						
Softwood	979	617	464	251	181	467
Hardwood	3,300	2,603	580	486	326	1,371
Upland hardwoods						
Softwood	--	--	136	267	151	161
Hardwood	3,961	708	250	235	55	132
Scrub oak						
Softwood	--	--	--	--	54	54
Hardwood	--	--	--	--	2	2
All types						
Softwood	2,865	3,358	779	349	261	1,093
Hardwood	2,227	647	137	128	24	233

[1] Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand size, 1949

(in standard cords)

Forest type and species group	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[2]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	10.4	--	14.1	0.1	6.5	0.1	1.6	[3]	4.3	0.1
Hardwood	--	1.0	0.1	0.1	[3]	0.3	[3]	0.5	[3]	0.4
Slash pine										
Softwood	16.3	0.4	15.4	0.3	7.9	0.3	2.1	0.1	7.5	0.2
Hardwood	4.9	3.0	0.5	0.9	0.3	0.7	0.1	0.2	0.3	0.6
Loblolly pine										
Softwood	16.1	0.3	15.4	0.4	2.9	0.3	1.2	0.4	6.2	0.4
Hardwood	4.7	5.8	3.6	3.9	0.8	2.5	0.4	2.5	1.6	3.1
Pond pine										
Softwood	8.4	1.5	10.6	0.3	3.9	0.5	1.7	0.2	3.9	0.3
Hardwood	--	1.8	0.5	1.3	0.3	--	--	[3]	0.1	0.3
Sand pine										
Softwood	--	--	9.8	0.9	7.0	1.0	0.4	0.1	2.7	0.3
Hardwood	--	--	--	--	--	--	--	--	--	--
Cypress										
Softwood	8.5	1.3	19.2	1.0	10.0	0.8	2.1	0.6	12.0	0.9
Hardwood	5.7	1.9	2.6	2.0	1.3	0.6	0.1	0.6	1.6	1.3
Lowland hardwoods										
Softwood	2.4	[3]	1.7	0.2	1.6	0.2	0.8	0.1	1.5	0.2
Hardwood	11.4	10.2	13.0	10.3	8.0	7.4	2.6	5.8	8.1	8.0
Upland hardwoods										
Softwood	--	--	--	--	0.4	--	0.5	0.1	0.5	[3]
Hardwood	10.4	--	4.9	15.5	2.5	5.6	0.5	3.9	1.0	4.3
Scrub oak										
Softwood	--	--	--	--	--	--	0.2	[3]	0.2	[3]
Hardwood	--	--	--	--	--	--	[3]	2.2	[3]	2.2
All types										
Softwood	7.4	0.2	12.7	0.4	5.8	0.3	1.3	0.1	4.8	0.2
Hardwood	8.4	7.3	3.6	3.1	1.9	2.1	0.3	1.4	1.5	2.0

[1] Sound wood and bark, excluding volume of palms.

[2] Sound trees; cull trees.

[3] Less than 0.05 cords per acre.

Table 16.--Average volume[1] per acre of pole timber trees by forest type, species group, and stand size, 1949

(in standard cords)

Forest type and species group	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[2]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	1.9	--	4.4	[3]	3.8	[3]	0.8	[3]	2.0	[3]
Hardwood	--	0.6	[3]	0.1	[3]	0.3	[3]	0.3	[3]	0.3
Slash pine										
Softwood	1.8	--	4.1	0.1	5.4	0.2	0.8	[3]	2.7	0.1
Hardwood	2.7	1.3	0.4	0.4	0.2	0.4	0.1	0.2	0.2	0.3
Loblolly pine										
Softwood	0.7	--	1.1	0.1	2.2	0.3	0.8	0.1	1.1	0.1
Hardwood	2.0	2.6	2.3	1.5	0.6	1.4	0.1	0.5	0.9	1.1
Pond pine										
Softwood	--	--	2.5	0.1	2.0	0.5	0.4	--	1.1	0.1
Hardwood	--	1.5	0.3	0.6	0.3	--	--	[3]	0.1	0.1
Sand pine										
Softwood	--	--	1.9	0.4	6.4	0.8	0.3	--	1.9	0.2
Hardwood	--	--	--	--	--	--	--	--	--	--
Cypress										
Softwood	0.6	0.2	7.1	0.4	0.7	0.5	0.8	0.3	5.0	0.4
Hardwood	3.3	1.1	1.8	1.1	1.3	0.6	0.1	0.4	1.2	0.8
Lowland hardwoods										
Softwood	0.1	--	0.2	0.1	0.5	[3]	0.3	[3]	0.3	[3]
Hardwood	2.8	1.8	5.9	3.0	6.4	3.0	[3]	2.0	4.3	2.6
Upland hardwoods										
Softwood	--	--	--	--	[3]	--	0.1	--	0.1	--
Hardwood	1.3	--	3.0	2.3	1.7	3.7	0.3	1.8	0.6	2.2
Scrub oak										
Softwood	--	--	--	--	--	--	0.1	--	0.1	--
Hardwood	--	--	--	--	--	--	[3]	1.6	[3]	1.6
All types										
Softwood	0.6	[3]	3.7	0.1	3.6	0.1	0.6	[3]	1.9	0.1
Hardwood	2.6	1.7	1.8	1.1	1.5	1.0	0.2	0.7	0.8	0.9

[1] Sound wood and bark, excluding volume of palms.

[2] Sound trees; cull trees.

[3] Less than 0.05 cords per acre.

Table 17.--Number[1] of turpentine pine trees by working status and tree size, 1949

(in thousands of trees)

Working status	Pole size trees	Small saw-timber trees	Large saw-timber trees	All trees
Round timber[2]	135,602	48,254	1,570	185,426
Working timber[3]	411	9,625	294	10,330
Resting timber	685	6,314	298	7,297
Abandoned timber	332	3,407	268	4,007
Worked-out timber	436	4,344	426	5,206
All classes	137,466	71,944	2,856	212,266

1/ Includes sound and rough cull trees.

2/ In 1934 there were 25,100,000 round trees 9.0 inches d.b.h. and larger compared to 49,824,000 in 1947.

3/ In 1934 there were 21,404,000 working trees 9.0 inches d.b.h. and larger compared to 9,919,000 in 1947.

Table 18.--Area of turpentine timber crops by working status, 1949

Crop working status	Area	
	Acres	Percent
Round timber	882,100	50.3
Working timber		
Front-faced	291,000	16.6
Back-faced	193,900	11.0
Resting timber	241,100	13.7
Abandoned timber	64,800	3.7
Worked-out timber	81,900	4.7
All classes	1,754,800	100.0

Table 19.--Area of stump land and tonnage of wood naval stores stumps by availability class, 1949

Availability class	Area	Tonnage[1]
	Acres	Thousand tons
Merchantable area	3,226,000	[4] 10,418
Marginal area[2]	252,700	763
Potential area[3]	148,900	483
Inaccessible area	156,800	468
All classes	3,784,400	12,132

[1] Includes stumps on agricultural land.

[2] Stump-land areas less than 25 acres in extent and partially worked areas.

[3] Unworkable at present due to density of timber stands.

[4] A check on the tons of stumps harvested from 90,000 acres indicates the recoverable tonnage under existing practices is approximately two-thirds of the merchantable volume shown.

Table 20.--Number of trees[1] by species group, quality class, and tree size, 1949

(in thousands of trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small saw timber trees	Large saw-timber trees	All trees
Yellow pines					
Sound trees	567,912	153,541	79,506	4,013	804,972
Rough culls	52,199	3,198	1,201	200	56,798
Rotten culls	30,088	1,132	346	102	31,668
Total	650,199	157,871	81,053	4,315	893,438
Other softwoods:					
Sound trees	134,242	52,146	22,109	718	209,215
Rough culls	15,372	3,377	1,076	27	19,852
Rotten culls	9,234	3,285	1,976	505	15,000
Total	158,848	58,808	25,161	1,250	244,067
Soft-textured hdwds.					
Sound trees	283,772	54,064	11,362	1,783	350,981
Rough culls	87,402	15,821	3,253	370	106,846
Rotten culls	37,565	15,418	5,519	1,504	60,006
Total	408,739	85,303	20,134	3,657	517,833
Hard-textured hdwds.					
Sound trees	152,914	27,996	5,578	1,198	187,686
Rough culls[2]	308,291	71,296	8,712	1,521	389,820
Rotten culls	25,058	12,809	4,418	2,616	44,901
Total	486,263	112,101	18,708	5,335	622,407
Palms	[3]	2,366	18,910	89	21,365
All species	1,704,049	416,449	163,966	14,646	2,299,110

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[1] All trees 1.0 inches d.b.h. and larger.

[2] Includes scrub oak and noncommercial trees.

[3] Not recorded.

Table 21.--Area of poorly stocked stands and unstocked areas by plantability classes, 1949

Forest type[1]	No planting required[2]	Suitable for machine planting	Hand planting required	All classes
	Acres	Acres	Acres	Acres
Longleaf pine	751,100	587,300	31,700	1,370,100
Slash pine	384,900	247,200	76,500	708,600
Loblolly pine	52,100	26,800	3,200	82,100
Pond pine	67,500	22,300	6,900	96,700
Sand pine	23,400	3,000	--	26,400
Upland hdwds.	110,500	37,500	33,900	181,900
Scrub oak	51,100	630,700	45,600	727,400
All types	1,440,600	1,554,800	197,800	3,193,200
Percent	45.1	48.7	6.2	100.0

[1] Lowland types not classified.

[2] Sufficient seed trees present or area is restocking naturally.

Table 22.--Commercial forest area by forest type and degree of stocking, 1949

STOCKING IN SOUND TREES

Forest type	Degree of stocking[1]					Total area
	0-9 percent	10-39 percent	40-69 percent	70-99 percent	100 + percent	
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	1,007,200	877,100	259,200	76,300	32,100	2,251,900
Slash pine	453,100	653,300	314,800	217,900	293,100	1,932,200
Loblolly pine	86,300	48,100	70,700	17,100	41,600	263,800
Pond pine	65,200	109,200	36,700	5,500	--	216,600
Sand pine	31,100	69,800	24,900	23,500	80,200	229,500
Cypress	90,700	77,500	87,200	125,700	227,700	608,800
Lowland hdwds.	97,100	233,000	346,400	177,100	237,600	1,091,200
Upland hdwds.	141,800	68,600	42,600	16,600	--	269,600
Scrub oak	667,000	60,400	--	--	--	727,400
Palm	10,700	--	--	--	--	10,700
All types	2,650,200	2,197,000	1,182,500	659,700	912,300	7,601,700
Percent	34.9	28.9	15.5	8.7	12.0	100.0

STOCKING IN TREES OF ALL QUALITY CLASSES[2]

Forest type	0-9 percent	10-39 percent	40-69 percent	70-99 percent	100 + percent	Total area
Longleaf pine	843,200	869,500	352,200	141,500	45,500	2,251,900
Slash pine	406,300	595,700	343,000	206,200	381,000	1,932,200
Loblolly pine	47,700	58,000	39,500	36,900	81,700	263,800
Pond pine	65,200	101,200	41,000	3,700	5,500	216,600
Sand pine	14,900	31,400	25,700	35,900	121,600	229,500
Cypress	70,200	73,000	59,700	104,600	301,300	608,800
Lowland hdwds.	19,900	74,300	130,400	235,800	630,800	1,091,200
Upland hdwds.	31,200	60,900	58,100	79,700	39,700	269,600
Scrub oak	99,900	369,000	215,100	35,400	8,000	727,400
Palm	--	--	4,700	6,000	--	10,700
All types	1,598,500	2,233,000	1,269,400	885,700	1,615,100	7,601,700
Percent	21.0	29.4	16.7	11.7	21.2	100.0

1/ Including trees 1.0 inches d.b.h. and larger.

2/ Includes sound trees, cull trees, and palms.

Table 23.--County area by broad use class, 1949

County	Total area1/	Non-forest area		Forest land		
		Land	Water	Non-commercial2/	Commercial	
	Acres	Acres	Acres	Acres	Acres	Percent
Alachua	615,000	207,000	37,700	300	370,000	64.1
Baker	376,300	18,900	1,100	--	356,300	95.0
Bradford	195,200	43,400	7,500	--	144,300	76.9
Clay	412,100	32,700	29,100	1,000	349,300	91.2
Columbia	505,000	107,600	4,100	1,200	392,100	78.3
Dixie	453,800	49,800	9,100	--	394,900	88.8
Duval	537,600	133,800	56,200	1,400	346,200	71.9
Flagler	322,600	20,700	17,000	1,700	283,200	92.7
Gilchrist	222,700	69,000	4,100	--	149,600	68.4
Hamilton	329,600	59,100	3,500	1,300	265,700	81.5
Lafayette	352,600	58,100	4,300	--	290,200	83.3
Levy	727,700	155,400	37,100	800	534,400	77.4
Madison	453,100	143,600	6,000	3/	303,500	67.9
Marion	1,057,300	223,400	41,700	--	792,200	78.0
Nassau	429,400	49,400	15,200	1,500	363,300	87.7
Putnam	562,600	50,000	65,300	--	447,300	89.9
St. Johns	422,400	53,400	43,800	1,400	323,800	85.5
Suwannee	439,700	180,000	7,200	700	251,800	58.2
Taylor	673,300	48,200	15,700	18,300	591,100	89.9
Union	156,800	27,000	2,100	--	127,700	82.5
Volusia	772,500	101,400	83,900	62,400	524,800	76.2
Unit total	10,017,300	1,831,900	491,700	92,000	7,601,700	79.8

1/ Gross area from Bureau of the Census, 1940.

2/ Non-productive forest land plus forest land withdrawn from commercial use.

3/ Less than 50 acres.

Table 24.--Ownership of commercial forest land by county, 1949

County	Private		Public					
			National forest	Other federal	State	County, city, town	Total public	
	Acres	Percent	Acres	Acres	Acres	Acres	Acres	Percent
Alachua	362,600	98.0	--	500	5,700	1,200	7,400	2.0
Baker	278,100	78.1	77,500	500	200	--	78,200	21.9
Bradford	133,000	92.2	--	300	11,000	--	11,300	7.8
Clay	282,500	80.9	--	42,700	24,100	1/	66,800	19.1
Columbia	313,900	80.1	76,200	400	1,300	300	78,200	19.9
Dixie	393,700	99.7	--	400	700	100	1,200	0.3
Duval	330,900	95.6	--	12,200	1,400	1,700	15,300	4.4
Flagler	282,100	99.6	--	300	500	300	1,100	0.4
Gilchrist	148,800	99.5	--	500	300	--	800	0.5
Hamilton	265,300	99.8	--	400	1/	1/	400	0.2
Lafayette	289,600	99.8	--	300	300	--	600	0.2
Levy	532,900	99.7	--	900	500	100	1,500	0.3
Madison	303,200	99.9	--	100	200	--	300	0.1
Marion	541,700	68.4	241,700	3,800	4,700	300	250,500	31.6
Nassau	358,600	98.7	--	1/	3,400	1,300	4,700	1.3
Putnam	414,800	92.7	21,900	3,400	6,600	600	32,500	7.3
St. Johns	321,800	99.4	--	700	1,000	300	2,000	0.6
Suwannee	251,600	99.9	--	200	--	--	200	0.1
Taylor	589,900	99.8	--	200	900	100	1,200	0.2
Union	121,800	95.4	--	800	5,100	--	5,900	4.6
Volusia	520,000	99.1	--	800	2,600	1,400	4,800	0.9
Unit total	7,036,800	92.6	417,300	69,400	70,500	7,700	564,900	7.4

1/ Less than 50 acres.

Table 25.--Net volume[1] of saw timber by county and species group, 1949

(in thousand board feet)

County	Softwoods[2]	Tupelo, sweetgum, and soft maple[3]	Other hardwoods	All species
Alachua	499,000	83,700	81,000	663,700
Baker	706,400	50,100	1,000	757,500
Bradford	250,500	9,400	2,100	262,000
Clay	255,800	54,700	13,500	324,000
Columbia	599,800	46,000	25,700	671,500
Dixie	290,300	90,700	77,600	458,600
Duval	257,600	89,200	27,300	374,100
Flagler	471,000	44,400	7,100	522,500
Gilchrist	135,100	600	5,900	141,600
Hamilton	356,100	37,300	10,400	403,800
Lafayette	489,700	16,600	13,300	519,600
Levy	617,700	86,400	96,000	800,100
Madison	372,600	74,900	13,900	461,400
Marion	563,800	65,100	61,700	690,600
Nassau	348,700	96,000	35,000	479,700
Putnam	382,100	91,700	8,600	482,400
St. Johns	314,700	66,000	16,500	397,200
Suwannee	175,800	31,600	5,800	213,200
Taylor	529,700	54,500	38,900	623,100
Union	252,900	59,300	5,600	317,800
Volusia	425,000	58,100	16,300	499,400
Unit total	8,294,300	1,206,300	563,200	10,063,800

[1] Log scale, International 1/4-inch rule.

[2] Includes pine, cypress, and cedar.

[3] Includes other soft-textured hardwoods.

Table 26.--Net volume[1] of saw timber by county, broad species group, and diameter class group, 1949

County	Softwoods		Hardwoods		Soft-woods	Hard woods
	9-14 inches	15 + inches	11-16 inches	17 + inches		
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent	Percent
Alachua	459,200	39,800	114,700	50,000	75.2	24.8
Baker	609,900	96,500	30,400	20,700	93.3	6.7
Bradford	225,000	25,500	9,300	2,200	95.6	4.4
Clay	225,400	30,400	32,300	35,900	79.0	21.0
Columbia	533,700	66,100	49,300	22,400	89.3	10.7
Dixie	283,500	6,800	106,400	61,900	63.3	36.7
Duval	218,900	38,700	79,200	37,300	68.9	31.1
Flagler	421,500	49,500	36,000	15,500	90.1	9.9
Gilchrist	121,700	13,400	4,000	2,500	95.4	4.6
Hamilton	326,800	29,300	42,000	5,700	88.2	11.8
Lafayette	460,900	28,800	18,300	11,600	94.2	5.8
Levy	531,800	85,900	129,100	53,300	77.2	22.8
Madison	332,200	40,400	76,700	12,100	80.8	19.2
Marion	455,100	108,700	84,400	42,400	81.6	18.4
Nassau	322,200	26,500	102,800	28,200	72.7	27.3
Putnam	281,800	100,300	79,700	20,600	79.2	20.8
St. Johns	253,400	61,300	49,600	32,900	79.2	20.8
Suwannee	132,900	42,900	28,300	9,100	82.5	17.5
Taylor	489,000	40,700	61,900	31,500	85.0	15.0
Union	220,100	32,800	40,200	24,700	79.6	20.4
Volusia	355,200	69,800	54,700	19,700	85.1	14.9
Unit total	7,260,200	1,034,100	1,229,300	540,200	82.4	17.6

[1] Log scale, International 1/4-inch rule.

Table 27. Net volume[1] of all trees by county, pulping-species groups, and tree diameter groups, 1949

SOUND TREES (in thousand cords)

County	Yellow pines		Tupelo, sweetgum and soft maple[2]		Other species		All species
	5-12 inches	13 + inches	5-12 inches	13 + inches	5-12 inches	13 + inches	
Alachua	1,582	361	207	173	273	205	2,801
Baker	2,020	424	183	111	427	102	3,267
Bradford	889	96	42	16	198	55	1,296
Clay	948	249	106	122	137	14	1,576
Columbia	2,090	345	514	81	448	109	3,587
Dixie	772	101	454	165	730	254	2,476
Duval	794	161	221	176	271	74	1,697
Flagler	987	194	231	80	872	164	2,528
Gilchrist	223	71	9	-	225	42	570
Hamilton	1,228	115	281	52	304	23	2,003
Lafayette	974	417	103	34	339	56	1,923
Levy	1,482	293	402	158	1,332	319	3,986
Madison	782	237	425	115	535	58	2,152
Marion	1,770	607	215	129	171	141	3,033
Nassau	1,399	276	357	191	255	77	2,555
Putnam	1,103	344	326	191	288	56	2,308
St. Johns	873	275	197	155	187	78	1,765
Suwannee	536	183	100	56	65	19	959
Taylor	1,805	303	357	112	648	122	3,347
Union	632	136	205	121	182	47	1,323
Volusia	679	200	292	96	1,026	198	2,491
Unit total	23,568	5,388	5,227	2,334	8,913	2,213	47,643

ROTTEN AND ROUGH CULLS (in thousand cords)

County	Yellow pines 5-12 inches	Yellow pines 13 + inches	Tupelo, sweetgum and soft maple 5-12 inches	Tupelo, sweetgum and soft maple 13 + inches	Other species 5-12 inches	Other species 13 + inches	All species
Alachua	34	—	123	180	308	364	1,009
Baker	46	22	143	65	57	8	341
Bradford	7	4	60	19	84	21	195
Clay	1	11	91	158	313	204	778
Columbia	9	2	153	95	187	139	585
Dixie	3	-	210	186	486	566	1,451
Duval	1	9	146	191	152	229	728
Flagler	22	24	76	45	108	134	409
Gilchrist	3		19		342	84	448
Hamilton	25	16	108	94	207	131	581
Lafayette	6	-	42	6	156	36	246
Levy	4	8	128	180	462	618	1,400
Madison	23	20	173	106	405	201	928
Marion	100	9	130	196	530	555	1,520
Nassau	8	4	210	152	207	321	902
Putnam	3	18	193	286	591	206	1,297
St. Johns	23	16	151	157	210	133	690
Suwannee	5	—	35	67	408	156	671
Taylor	52	30	175	145	419	281	1,102
Union	8	4	66	84	46	32	240
Volusia	70	29	229	107	447	291	1,173
Unit total	453	226	2,661	2,519	6,125	4,710	16,694

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[1] Sound wood and bark, excluding volume of palms (limbs of sawlog-size hardwoods are included in cull volumes).

[2] Includes bay, magnolia, and yellow-poplar.

DEFINITION OF TERMS

Land-Use Classes

Forest. Land bearing forest growth, land from which the forest has been removed and which shows no evidence of any other recent land use, or former agricultural land which now has a five-percent stocking of trees. Subdivided into the following classes:

Commercial: Land bearing, or capable of bearing, timber of commercial character and available now or prospectively for commercial use.

Reserved: Forest land in public ownership upon which commercial timber cutting is prohibited.

Non-productive: Forest land of such low productivity or so inaccessible that commercial timber will not be produced.

Non-forest. Land less than five percent stocked with trees and showing evidence of non-forest use.

Agriculture: Under cultivation or in pasture, including farm yards on active farms.

Idle: Land previously cultivated or pastured but now idle or abandoned. If reverting to forest there must be less than five percent stocking of trees.

Marsh: Low, boggy, non-forested land usually supporting a heavy growth of grass.

Dunes and beaches: Non-forested sand dunes or coastal beaches.

Urban and other: Includes towns, suburban areas being developed for residential or other urban purposes, school yards, cemeteries, industrial sites, roads, railroads, power lines, and other rights-of-way. Scattered areas of timber within exterior boundaries of cities or villages are also included.

Water: Includes both the small ponds and lakes less than 40 acres in size and streams, sloughs, and canals less than ten chains in width classed as "land area" by the Bureau of the Census. Also includes the "inland water" listed by the Census. On coastal areas the water-line is the mean high-tide mark; tidal flats are classed as water.

Forest Types

Longleaf pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with longleaf pine predominating.

Slash pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with slash pine predominating.

Loblolly pine. Stands in which coniferous species comprise at least 25 percent of the dominant trees, with loblolly pine predominating. Spruce pine is included in this type.

Pond pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees with pond pine predominating.

Sand pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees with sand pine predominating.

Cypress. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with cypress predominating. White cedar is also included with this type.

Lowland hardwoods. Stands in which mixed hardwoods such as tupelo gum, black-gum, sweetgum, white oak, water oak, red maple, and ash comprise at least 75 percent of the dominant and codominant trees. Found along rivers, small streams, and in swamps and bays.

Upland hardwoods. Stands in which mixed hardwoods such as red oak, white oak, post oak, hickory, ash, sweetgum, elm, and yellow-poplar comprise at least 75 percent of the dominant and codominant trees. Found on the drier upland sites and on low rolling hills bordering the flatwood zone.

Scrub oak. Stands in which scrub species such as blackjack, bluejack, turkey and laurel oaks predominate and in which sound commercial species comprise less than five percent of satisfactory stocking.

Palms. Stands in which there is at least a five-percent stocking of merchantable palm trees and less than five-percent stocking of other sound commercial species.

Stand-Size Classes

Saw timber. Stands containing at least 1,500 board feet net, International 1/4-inch log rule, per acre in sound, live, softwood trees 9.0 inches d.b.h. or larger or hardwood trees 11.0 inches d.b.h. or larger. Two classes of saw-timber stands are recognized:

Large saw timber: Stands of saw timber having more than 50 percent of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Small saw timber: Stands of saw timber having 50 percent or less of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Pole timber. Stands at least 10 percent stocked with pole-size or larger timber, with at least one-half the minimum stocking in pole sizes, and which have less than 1,500 board feet net per acre of saw timber.

Seedling and sapling. Stands less than 10 percent stocked by pole-size or larger trees and with less than 1,500 board feet net per acre, but at least 40 percent stocked with commercial species. Eight hundred seedlings or saplings per acre are considered full stocking.

Poorly stocked and unstocked. Stands of pole-size or larger trees that are less than 10 percent stocked, seedling or sapling stands less than 40 percent stocked, or nonstocked forest land.

Diameters

D.b.h. (diameter at breast height). Stem diameter in inches, outside bark, measured at 4½ feet above the ground.

Diameter class. All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint; e.g., trees 7.0 to and including 8.9 inches are in the 8-inch class.

Tree Classification

Sound saw-timber trees. Softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound saw timber.

Sound pole timber trees. Straight-boled trees between 5.0 inches d.b.h. and saw-timber size.

Sound sapling-size trees. Trees 1.0 inches to 4.9 inches d.b.h. which will grow into pole or saw-timber size trees of sound quality.

Rough cull trees. Trees that fail to qualify as sound timber because of poor form, excessive limbiness, or other sound defect. Volumes shown for rough cull trees also include the limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of sound saw-timber-size hardwoods. Scrub oak and noncommercial species are included in this group.

Rotten cull trees. Trees that fail to qualify as sound timber because of rotten defect.

Palms. All species of Sabal 5.0 inches d.b.h. and larger with at least 12 feet of clear stem. All palm trees were considered to be free of rotten defect.

Species Groups

Softwoods. All of the pines, eastern redcedar, Atlantic white-cedar, pond cypress, and baldcypress.

Soft hardwoods. Black and water tupelos, sweetgum, and soft maple. The other soft-textured hardwoods include sweetbay, cottonwood, willow, basswood, southern magnolia, and yellow-poplar.

Hard hardwoods. All of the oaks, hickories, and ash. The other hard-textured hardwoods include river birch, elm, hackberry, and sycamore.

Volume Estimates

Board-foot volume. The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of saw-timber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords. For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. For cull trees similar volumes are included plus the volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of saw-timber size hardwoods.

Volume in cubic feet. Same as volume shown in cords except bark is not included.

International 1/4-inch log rule. A rule for estimating the board-foot volume of 4 foot log sections, according to the formula $V = .905\ (0.22D^2 \quad 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord. A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, 90 cubic feet of softwoods (wood and bark) or 80 cubic feet of hardwoods (wood and bark).

Gum Naval Stores Conditions

Round timber. A minimum of 15 longleaf and slash pine trees 9.0 inches d.b.h. or larger per acre that have never been worked for naval stores.

Working. Longleaf and slash pine trees that are now being worked for naval stores.

> Front-faced. Turpentine tree species on which the front or first face is now being worked.
>
> Back-faced. Turpentine tree species on which the front face has been worked out and on which a back (second or third, etc.) face is being worked.

Resting. Longleaf and slash pine trees with a worked-out front face at least 5 feet high and on which back-facing has not been started.

Abandoned. Longleaf and slash pine trees on which faces less than 5 feet high were discontinued.

Worked-out. Longleaf and slash pine trees on which two or more faces at least 5 feet high have been worked out and with no possibility of supporting another face.

Stocking

Stocking classifications were based on the number of stems present by d.b.h. classes. Areas having the minimum numbers of trees listed below, either in a single diameter class or in combinations, were considered adequately stocked.

DBH	Minimum number trees per acre
2 inches	800
4 inches	600
6 inches	450
8 inches	300
10 inches	200
12 inches	150
14 inches	110

RELIABILITY OF THE DATA

In general there are two possible sources of error in estimating timber volumes and land areas in various categories under procedures used by the Forest Survey. These are (1) common mistakes resulting from errors of judgment in classifying or recording data, mistakes made in compiling the information or bias in the application of techniques, and (2) sampling errors.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of the data. Common errors are eliminated or minimized through training and frequent check cruises in the field and through complete editing and machine verification of office procedures in compiling the data.

Sampling errors (standard errors of estimate) carry no connotation of faulty work, but are theoretical measures of the reliability of the estimates based on the variability exhibited by the sample data. Sampling errors were the only measurable errors involved in computing the reliability of the data.

Forest area. The sampling intensity was sufficient to provide an estimate of the forest acreage of the Unit with a standard error of ± 0.6 percent. This indicates the probabilities are two out of three that the actual forest area is within ± 0.6 percent of the given estimate.

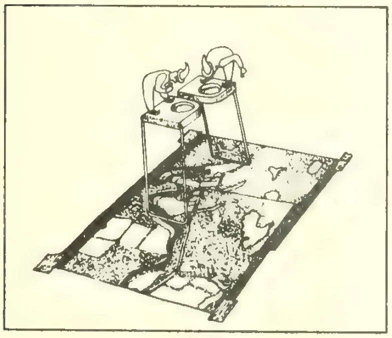
Timber volumes. The standard error of estimate of the board-foot volume of saw timber in the Unit is ± 2.4 percent. Here again, the probabilities are two out of three that the actual volume is ± 2.4 percent of the given estimate. Corresponding errors for the total volume in cords or cubic feet were not computed, but they should be smaller.

Use of county data. The tables showing area and timber volumes by county are included to facilitate the grouping of county data in any combination desired. Statistics for individual counties have a standard error of estimate for forest area ranging from ± 2.7 to ± 7.0 percent, and for board-foot volume from ±7.0 to ± 18.0 percent. Obviously detailed comparison between counties are subject to considerable error and should be avoided. Grouping a number of counties together will increase the reliability of the area and volume estimates and make these data sufficiently accurate for most purposes.

HOW THE FOREST INVENTORY IS MADE

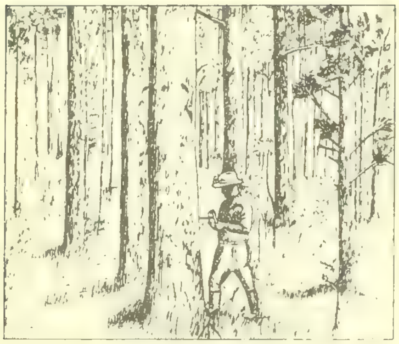
The present system of inventory is based upon interpretation of aerial photographs supplemented by cruising of randomly selected ground plots. The county is the basic work unit. Steps in the procedure are as follows:

1. Acreages of forest land are estimated with the use of a dot grid placed on every 3rd contact print along flight lines in each county. The proportion of dots falling on forest areas when applied to the gross area of the county yields a preliminary estimate of the acreage of forest land. This is later revised after certain field checks.

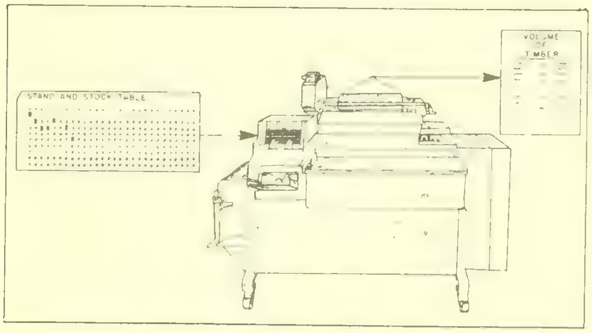


2. Every 3rd plot listed as forest in step one is classified into forest type, stand class, and density class by careful stereoscopic analysis of the photographs. The proportion of plots falling in each classification when applied to the forest area of the county gives the area in each classification. These areas are revised following ground checking.

3. Timber cruisers make a detailed on-the-ground tally of every 3rd large sawtimber photo plot, every 4th small sawtimber, every 6th pole timber, every 13th seedling and sapling plot, and every 26th poorly stocked plot, to obtain volume, growth, cull, and mortality data, and to check accuracy of photo classification. They also check a sample of the idle and agricultural plots to determine the area reverting to forest.



4. Growth estimates are based on increment borings taken from trees of the various diameters and species in each forest type and stand class.



5. All field data are sent to the Asheville office for editing and are placed on punch cards for machine tabulation. Statistical techniques are used to correct for changes in photo classification, and to determine final figures on areas, volumes, and growth.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia. 1946

No. 22 - Southern Forests as a Source of Pulpwood. 1947

No. 23 - 1946 Pulpwood Production by County in the Southeast. 1947

No. 24 - Southern Pulpwood Production and the Timber Supply. 1948

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina. 1948

No. 26 - 1946 Commodity Drain by County from South Carolina Forests. 1948

No. 27 - 1947 Pulpwood Production by County in the Southeast. 1948

No. 28 - South Carolina's Forest Resources, 1947. 1949

No. 29 - 1948 Pulpwood Production by County in the Southeast. 1949

FOREST SURVEY RELEASE NO. 31 NOVEMBER 1, 1949

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FOREST RESOURCES OF CENTRAL FLORIDA, 1949

by J. F. McCormack, Forester
Division of Forest Economics

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA
I. T. HAIG, Director

In cooperation with
FLORIDA FOREST SERVICE
TALLAHASSEE, FLORIDA
C. H. COULTER, State Forester

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

The State of Florida was inventoried by the Forest Survey in the period 1934-36 and reports presenting the findings have been published. Since then, better forest management, more intensive forest use, changes in land use, and other factors have caused changes in the forest growing stock that can only be measured accurately by on-the-ground surveys. A resurvey of the forest resources of Florida is now under way. This progress report presents area and volume statistics of the resurvey in Central Florida (Survey Unit No. 3). A statistical report covering Northeast Florida, Survey Unit No. 1, was published June 15, 1949. Reports covering the remainder of the State will be published in the near future. When complete statistical data are available, an analytical report will be prepared which will interpret these statistics and focus attention upon the principal forest problems and possible solutions.

ACKNOWLEDGMENTS

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The timber inventory work in the field was under the supervision of Mackay B. Bryan. Photo interpretation work was done by N. F. Force, R. C. Aldrich, and R. W. Cooper. Sample plot work was under the direction of Fritz Lorentzen, E. W. Vetter, M. W. McClure, W. A. McCarty, H. W. Allen, E. A. Schluter, Ben Juskie, and F. S. Hill.

Office compilation of the data was under the direction of Miss Agnes Creasman, assisted by Mrs. Christine Paxton, Miss Priscilla Walker, and Miss Camilla Young.

CONTENTS

Page

1949 FACTS AND SIGNIFICANT CHANGES - 1

TABLES FOR THE SURVEY UNIT, 1949

AREA

1. Gross area by broad use class - 3
2. Ownership of land - 4
3. Commercial forest area by forest type and stand size - - - - - - 5

NET VOLUME OF SAW TIMBER

4. By species and stand size - 6
5. By species and diameter class - - - - - - - - - - - - - - - - - - - 7
6. By forest type and stand size - - - - - - - - - - - - - - - - - - - 8

NET VOLUME OF ALL TREES (in thousand cords)

7. By species and stand size - 9
8. By species and diameter class - - - - - - - - - - - - - - - - - - - 10
9. By species and class of material - - - - - - - - - - - - - - - - - 11
10. By forest type and stand size - - - - - - - - - - - - - - - - - - - 12

NET VOLUME OF POLE TIMBER TREES (in thousand cords)

11. By forest type and stand size - - - - - - - - - - - - - - - - - - - 13

NET VOLUME OF ALL TREES (in thousand cubic feet)

12. By species and diameter class - - - - - - - - - - - - - - - - - - - 14
13. By species and class of material - - - - - - - - - - - - - - - - - 15

AVERAGE VOLUME PER ACRE

14. Of saw timber by forest type, species group, and stand size - - 16
15. Of all trees by forest type, species group, and stand size - - 17
16. Of pole timber by forest type, species group, and stand size - 18

NAVAL STORES

17. Number of turpentine trees by working status and tree size - - 19
18. Area of turpentine timber crops by working status - - - - - - - - 19
19. Area of stump land and tonnage of wood naval stores stumps - - 20

GENERAL

20. Number of trees by species group, quality class, and tree size 21
21. Area of poorly stocked stands by plantability class - - - - - - - 22
22. Commercial forest area by forest type and degree of stocking - 23

TABLES FOR COUNTIES, 1949

23. County area by broad use class - - - - - - - - - - - - - - - - - - 24
24. Ownership of commercial forest land - - - - - - - - - - - - - - - 25
25. Net volume of saw timber by species group - - - - - - - - - - - - 26
26. Net volume of saw timber by broad species group and diameter class - 27
27. Net volume of all trees by pulping species groups and tree diameter groups - 28

DEFINITION OF TERMS - 29

RELIABILITY OF THE DATA - 34

HOW THE FOREST INVENTORY IS MADE - - - - - - - - - - - - - - - - - - - 35

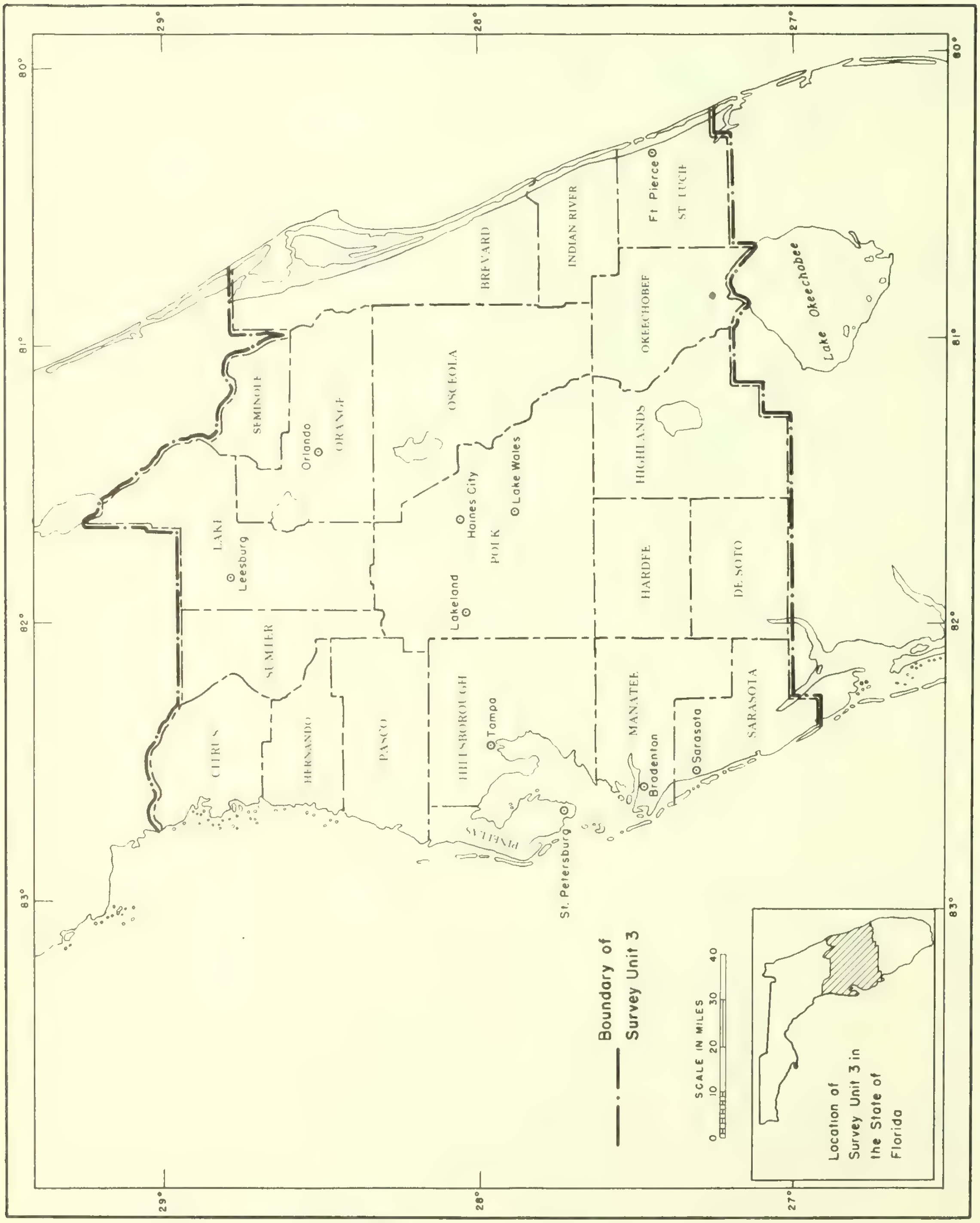

Figure 1.--Counties in Central Florida included in Survey Unit No. 3

FOREST RESOURCES OF CENTRAL FLORIDA

A resurvey of the forest resources of Florida was made in the period from June, 1948 to August, 1949. Each county in the state was surveyed, and this report presents up-to-date statistics on forest area and timber volumes for the group of 20 counties in Central Florida designated Survey Unit 3 (fig. 1). Comparison of these statistics with those of the original Forest Survey, completed in 1936, show the changes which have taken place in 13 years.

1949 FACTS AND SIGNIFICANT CHANGES

Acreage of forest land decreases: In 1949 there were 6.0 million acres of forest land in the Central Florida Unit, five percent less than in 1936. The decrease is largely due to land clearing for pasture and other agricultural uses. Forest land now amounts to 61 percent of all the land in the unit. Of the total forest, 5.7 million acres were classed as commercial forest land.

More forest land in hardwood types: Since 1936 the acreage of commercial forest land in pine types has decreased 25 percent, from 5.2 million to 3.9 million acres. The total area in hardwood types has more than doubled, increasing from 0.6 million to 1.6 million acres. This trend to hardwood types is also evident in other sections of Florida. The turpentine pine types decreased 26 percent in area, while the upland hardwood type, including areas of scrub oak, nearly tripled in acreage. However, pine types still predominate, since they currently occupy 68 percent of the commercial forest land.

Saw-timber volume decreases: The total volume of saw timber in 1949 was estimated to be 3.3 billion board feet. This total includes 181 million board feet in hardwoods 12 inches d.b.h., which were not considered saw timber in the original survey. The volume of these 12-inch hardwoods has been omitted in Table A to make the volumes comparable.

Table A.--Change in volume of saw timber, 1936 to 1949

Species group	1936	1949	Change
	Thousand bd. ft.	Thousand bd. ft.	Percent
Pines	2,566,800	1,794,200	- 30
Hardwoods[1]	642,900	619,200	- 4
Cypress[2]	613,200	732,800	+ 20
All species	3,822,900	3,146,200	- 18

[1] Excludes volume of hardwoods 12 inches d.b.h.

[2] Includes volume of white cedar.

Saw-timber stands occupy 55 percent of forest land: Stands of saw timber containing 1,500 board feet or more per acre occupied 55 percent of the commercial forest area in 1949. Over four-fifths of these stands fell into the small saw-timber class (see definition of terms, p. 30). Fourteen percent of the remaining forest area supported stands of pole timber, only three percent was in reproduction, and 28 percent was either unstocked or covered lightly with scattered trees of various sizes. No direct comparisons of forest area by stand class are possible between the original and current surveys, because different standards were used.

Total sound-tree volume decreases: The net cubic-foot volume of all sound trees 5.0 inches d.b.h. and larger decreased 6 percent, following the trend in saw-timber volume.

The volume of sound wood in cull trees increased for all species groups. The most significant change was in hardwood species, where the cull-tree volume is more than twice as great as it was in 1936.

Table B.--Change in volume of all trees 5.0 inches d.b.h. and larger, 1936 to 1949

Species group	Sound tree volume			Cull tree volume		
	1936	1949	Change	1936	1949	Change
	Million cu. ft.	Million cu. ft.	Percent	Million cu. ft.	Million cu. ft.	Percent
Pines[1]	756	611	- 19	18	22	+ 22
Hardwoods[2]	320	327	+ 2	271	583	+ 115
Cypress	286	343	+ 20	26	69	+ 165
All species	1,362	1,281	- 6	315	674	+ 114

1/ Excluding turpentine butts.

2/ Excluding limb volume of sound hardwood trees.

Area in working turpentine crops decreases: In 1949 there were only 39,100 acres in working turpentine timber crops, compared to 157,000 acres in 1936. The number of turpentine pine trees being worked also decreased heavily, from 2,434,000 in 1936 to 820,000 in 1949.

Eighty-five percent of the forest land is understocked: Most of the commercial forest land in the Unit is in a poorly stocked condition. Three-and-one-half million acres are denuded or very poorly stocked and 1.4 million acres are between 10 and 39 percent stocked with an adequate number of sound trees. This area of 4.9 million acres, less than 40 percent stocked, amounts to 85 percent of the total commercial forest land area.

Table 1.--Gross area[1] by broad use class, 1949

Class of use	Area	
	Acres	Percent
Forest land:		
Commercial	5,747,200	52.9
Reserved	11,900	0.1
Non-productive	220,100	2.0
Total forest	5,979,200	55.0
Non-forest land:		
Agricultural - active	1,136,100	10.4
Agricultural - idle	234,400	2.1
Marsh	2,062,000	19.0
Dunes and beaches	10,700	0.1
Urban and other[2]	356,600	3.3
Total non-forest	3,799,800	34.9
Total land area	9,779,000	89.9
Total water area	1,094,000	10.1
All classes	10,873,000	100.0

[1] From U. S. Bureau of the Census, 1940.

[2] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

Table 2.--Ownership of land, 1949

Class of ownership	All land		Commercial forest land	
	Acres	Percent	Acres	Percent
Public land:				
National forest	70,300	0.7	65,500	1.1
Indian	--	--	--	--
Other federal	249,500	2.5	170,400	3.0
Total federal	319,800	3.2	235,900	4.1
State	88,800	0.9	36,700	0.6
County and municipal	45,900	0.5	22,900	0.4
Total public	454,500	4.6	295,500	5.1
Private land	9,324,500	95.4	5,451,700	94.9
All classes	9,779,000	100.0	5,747,200	100.0

Table 3.--Commercial forest area by forest type and stand size, 1949

Forest type[1]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	--	96,500	304,800	76,800	2,093,300	2,571,400
Slash pine	13,600	86,600	83,400	47,000	901,100	1,131,700
Loblolly pine[2]	2,600	3,400	2,600	2,700	33,600	44,900
Pond pine	2,600	1,700	2,600	13,900	51,500	72,300
Sand pine	--	--	5,200	8,400	71,900	85,500
Cypress	--	124,900	111,800	37,700	12,900	287,300
All sftwd. types	18,800	313,100	510,400	186,500	3,164,300	4,193,100
Lowland hardwoods	65,700	111,200	156,600	147,300	259,400	740,200
Upland hardwoods	--	--	--	5,100	172,800	177,900
Scrub oak	--	--	--	--	555,400	555,400
All hdwd. types	65,700	111,200	156,600	152,400	987,600	1,473,500
Palm	--	--	--	--	80,600	80,600
All types	84,500	424,300	667,000	338,900	4,232,500	5,747,200
Percent	1.5	7.4	11.6	5.9	73.6	100.0

[1] See description of forest types and stand size classes in appendix.

[2] Includes 20,600 acres of redcedar type.

Table 4.--Net volume[1] of saw timber by species and stand size, 1949

(in thousand board feet)

Species[2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	--	263,400	167,900	10,400	398,400	840,100
Slash pine	54,900	298,200	116,600	17,600	361,100	848,400
Loblolly pine	9,000	6,800	2,300	--	37,400	55,500
Pond pine	6,900	8,200	2,000	6,400	18,600	42,100
Other pines	--	--	--	900	7,200	8,100
Total	70,800	576,600	288,800	35,300	822,700	1,794,200
Cypress	10,000	567,000	82,600	20,200	29,300	709,100
Cedar	4,300	2,300	3,700	--	13,400	23,700
Total sftwds.	85,100	1,145,900	375,100	55,500	865,400	2,527,000
Hardwoods:						
Tupelo	25,000	126,900	15,400	8,100	16,400	191,800
Sweetgum	39,600	59,800	16,700	17,000	4,300	137,400
Soft maple	20,700	48,000	7,600	4,300	2,000	82,600
Other soft hdwds.	35,500	54,000	14,300	5,300	7,500	116,600
Total	120,800	288,700	54,000	34,700	30,200	528,400
Red oaks	29,900	37,700	21,700	1,100	3,100	93,500
White oaks	43,700	9,300	3,800	1,800	3,500	62,100
Hickory	9,900	5,700	2,600	1,300	1,700	21,200
Ash	12,000	37,400	4,100	1,900	3,800	59,200
Other hard hdwds.	11,900	8,400	9,000	600	5,700	35,600
Total	107,400	98,500	41,200	6,700	17,800	271,600
Total hdwds.	228,200	387,200	95,200	41,400	48,000	800,000
All species	313,300	1,533,100	470,300	96,900	913,400	3,327,000
Percent	9.4	46.1	14.1	2.9	27.5	100.0

1/ Log scale, International 1/4-inch rule.

2/ See appendix for species combined with others.

Table 5.--Net volume[1] of saw timber by species and diameter class, 1949

Species	10-12 inches[2]	14-18 inches	20-24 inches	26 + inches	All diameters	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Softwoods:						
Longleaf pine	702,300	134,300	3,500	--	840,100	25.2
Slash pine	504,100	281,000	63,300	--	848,400	25.5
Loblolly pine	27,000	28,500	---	--	55,500	1.7
Pond pine	20,400	15,900	5,800	--	42,100	1.3
Other pines	8,100	---	--	--	8,100	0.2
Total	1,261,900	459,700	72,600	--	1,794,200	53.9
Cypress	468,000	236,700	4,400	--	709,100	21.3
Cedar	14,500	9,200	--	--	23,700	0.7
Total sftwds.	1,744,400	705,600	77,000	--	2,527,000	75.9
Hardwoods:						
Tupelo	51,900	95,500	27,200	17,200	191,800	5.8
Sweetgum	29,200	88,700	19,500	--	137,400	4.1
Soft maple	20,300	48,500	7,500	6,300	82,600	2.5
Other soft hdwds.	25,800	70,000	20,800	--	116,600	3.5
Total	127,200	302,700	75,000	23,500	528,400	15.9
Red oaks	16,400	41,400	34,600	1,100	93,500	2.8
White oaks	5,100	11,600	5,100	40,300	62,100	1.9
Hickory	700	7,800	12,700	--	21,200	0.6
Ash	19,400	37,900	1,900	--	59,200	1.8
Other hard hdwds.	12,000	20,500	1,700	1,400	35,600	1.1
Total	53,600	119,200	56,000	42,800	271,600	8.2
Total hdwds.	180,800	421,900	131,000	66,300	800,000	24.1
All species	1,925,200	1,127,500	208,000	66,300	3,327,000	100.0
Percent	57.9	33.9	6.2	2.0	100.0	

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[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included.

Table 6.--Net volume[1] of saw timber by forest type and stand size, 1949

(in thousand board feet)

Forest type[2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	--	267,800	164,300	8,700	392,500	833,300
Slash pine	54,200	297,700	88,800	6,000	325,500	772,200
Loblolly pine	8,800	7,400	1,800	600	50,400	69,000
Pond pine	6,900	5,400	2,000	6,300	6,300	26,900
Sand pine	--	--	--	900	6,900	7,800
Cypress	--	555,300	85,800	12,200	12,100	665,400
All sftwd. types	69,900	1,133,600	342,700	34,700	793,700	2,374,600
Lowland hardwoods	243,400	399,500	127,600	62,200	65,100	897,800
Upland hardwoods	--	--	--	--	10,600	10,600
Scrub oak	--	--	-	--	44,000	44,000
All hdwd. types	243,400	399,500	127,600	62,200	119,700	952,400
All types	313,300	1,533,100	470,300	96,900	913,400	3,327,000
Percent	9.4	46.1	14.1	2.9	27.5	100.0

[1] Log scale, International 1/4-inch rule.

[2] See description of forest types and stand-size classes in appendix.

Table 7.--Net volume[1] of all trees by species and stand size, 1949

SOUND TREES (in thousand cords)

Species	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	--	980	1,573	125	1,835	4,513
Slash pine	150	1,103	775	99	1,581	3,708
Loblolly pine	27	22	13	1	97	160
Pond pine	24	24	15	18	77	158
Other pines	--	--	54	12	31	97
Total	201	2,129	2,430	255	3,621	8,636
Cypress	34	2,730	1,340	200	137	4,441
Cedar	15	6	10	--	51	82
Total sftwds.	250	4,865	3,780	455	3,809	13,159
Hardwoods:						
Tupelo	76	565	166	152	63	1,022
Sweetgum	116	241	190	66	37	650
Soft maple	64	266	216	87	82	715
Other soft hdwds.	147	242	155	65	49	658
Total	403	1,314	727	370	231	3,045
Red oaks	105	136	237	6	68	552
White oaks	117	52	21	5	31	226
Hickory	26	14	23	8	8	79
Ash	62	237	68	24	34	425
Holly, dogwood	--	--	12	1	--	13
Other hard hdwds.	61	74	79	11	40	265
Total	371	513	440	55	181	1,560
Total hdwds.	774	1,827	1,167	425	412	4,605
All species	1,024	6,692	4,947	880	4,221	17,764
Percent	5.8	37.7	27.8	4.9	23.8	100.0

TREES OF OTHER QUALITY CLASSES (in thousand cords)

Rough culls						
Softwoods	7	176	141	26	313	663
Hardwoods[2]	436	1,136	1,054	484	3,361	6,471
Rotten culls	203	718	627	407	616	2,571
Palms	326	539	343	384	2,064	3,656
All other classes	972	2,569	2,165	1,301	6,354	13,361

[1] Sound wood and bark.

[2] Includes scrub oak and noncommercial species.

Table 8.--Net volume[1] of all trees by species and diameter class, 1949

SOUND TREES (in thousand cords)

Species	Pole trees		Saw-timber trees				All diameter
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20 + inches	
Softwoods:							
Longleaf pine	648	1,510	1,278	739	331	7	4,513
Slash pine	573	857	762	682	697	137	3,708
Loblolly pine	5	11	11	63	70	--	160
Pond pine	33	15	16	42	39	13	158
Other pines	46	29	6	16	--	--	97
Total	1,305	2,422	2,073	1,542	1,137	157	8,636
Cypress	1,412	1,207	690	562	561	9	4,441
Cedar	15	8	24	14	21	--	82
Total sftwds.	2,732	3,637	2,787	2,118	1,719	166	13,159
Hardwoods:							
Tupelo	157	191	178	147	243	106	1,022
Sweetgum	56	120	121	84	225	44	650
Soft maple	186	181	136	58	122	32	715
Other soft hdwds.	93	123	128	78	185	51	658
Total	492	615	563	367	775	233	3,045
Red oaks	112	120	77	48	109	86	552
White oaks	6	32	33	15	31	109	226
Hickory	10	9	7	2	20	31	79
Ash	62	137	66	57	98	5	425
Holly, dogwood	11	2	--	--	--	--	13
Other hard hdwds.	53	73	44	35	52	8	265
Total	254	373	227	157	310	239	1,560
Total hdwds.	746	988	790	524	1,085	472	4,605
All species	3,478	4,625	3,577	2,642	2,804	638	17,764
Percent	19.6	26.0	20.1	14.9	15.8	3.6	100.0

TREES OF OTHER QUALITY CLASSES (in thousand cords)

Species	6 inches	8 inches	10 inches	12 inches	14-18 inches	20 + inches	All diameter
Rough culls							
Softwoods	235	132	85	93	64	54	663
Hardwoods2/	1,539	1,037	920	1,046	1,058	871	6,471
Rotten culls	161	306	292	276	732	804	2,571
Palms	129	556	1,632	1,083	256	--	3,656
All other classes	2,064	2,031	2,929	2,498	2,110	1,729	13,361

1/ Sound wood and bark.

2/ Includes scrub oak and noncommercial species.

Table 9.--Net volume[1] of all trees by species and class of material, 1949

(in thousand cords)

Species	SOUND TREES				CULL TREES	
	Saw-timber trees		Pole timber trees	Total sound trees	Rough	Rotten
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	1,906	449	2,158	4,513	50	18
Slash pine	1,817	461	1,430	3,708	141	17
Loblolly pine	115	29	16	160	12	--
Pond pine	89	21	48	158	19	1
Other pines	18	4	75	97	57	--
Total	3,945	964	3,727	8,636	279	36
Cypress	1,474	348	2,619	4,441	333	453
Cedar	48	11	23	82	51	3
Total sftwds.	5,467	1,323	6,369	13,159	663	492
Hardwoods:						
Tupelo	408	88	526	1,022	269	276
Sweetgum	289	64	297	650	314	90
Soft maple	169	43	503	715	621	419
Other soft hdwds.	253	61	344	658	420	185
Total	1,119	256	1,670	3,045	1,624	970
Red oaks	199	44	309	552	674	480
White oaks	121	34	71	226	1,666	334
Hickory	41	12	26	79	30	9
Ash	127	33	265	425	398	216
Holly, dogwood	--	--	13	13	3	2
Scrub oak[2]	--	--	--	--	1,918	--
Other hard hdwds.	74	21	170	265	158	68
Total	562	144	854	1,560	4,847	1,109
Total hdwds.	1,681	400	2,524	4,605	6,471	2,079
All species	7,148	1,723	8,893	17,764	7,134	2,571
Percent	40.2	9.7	50.1	100.0	73.5	26.5

[1] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

[2] Includes noncommercial species.

Table 10.--Net volume[1] of all trees by forest type and stand size, 1949

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
SOUND TREES (in thousand cords)						
Longleaf pine	--	1,029	1,586	121	1,785	4,521
Slash pine	148	1,114	689	23	1,545	3,519
Loblolly pine	28	45	8	3	156	240
Pond pine	24	13	16	18	21	92
Sand pine	--	--	54	12	26	92
Cypress	--	2,816	1,230	191	48	4,285
All sftwd. types	200	5,017	3,583	368	3,581	12,749
Lowland hdwds.	824	1,675	1,364	511	451	4,825
Upland hdwds.[2]	--	--	--	1	46	47
Scrub oak	--	--	--	--	143	143
All hdwd. types	824	1,675	1,364	512	640	5,015
All types	1,024	6,692	4,947	880	4,221	17,764
Percent	5.8	37.7	27.8	4.9	23.8	100.0
ROUGH AND ROTTEN CULLS (in thousand cords)						
Longleaf pine	--	219	70	30	717	1,036
Slash pine	18	107	18	--	221	364
Loblolly pine	27	24	11	23	65	150
Pond pine	--	1	--	13	9	23
Sand pine	--	--	10	--	17	27
Cypress	--	614	244	65	69	992
All sftwd. types	45	965	353	131	1,098	2,592
Lowland hdwds.	601	1,065	1,469	738	1,507	5,380
Upland hdwds.[3]	--	--	--	48	855	903
Scrub oak	--	--	--	--	830	830
All hdwd. types	601	1,065	1,469	786	3,192	7,113
All types	646	2,030	1,822	917	4,290	9,705
Percent	6.7	20.9	18.8	9.4	44.2	100.0

[1] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

[2] Includes 1,000 cords in palm type.

[3] Includes 22,000 cords in palm type.

Table 11.--Net volume[1] of pole timber trees by forest type and stand size, 1949

SOUND TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	--	279	1,116	96	705	2,196
Slash pine	19	291	434	6	673	1,423
Loblolly pine	5	24	4	1	28	62
Pond pine	6	--	10	--	4	20
Sand pine	--	--	54	10	7	71
Cypress	--	1,384	1,001	161	15	2,561
All sftwd. types	30	1,978	2,619	274	1,432	6,333
Lowland hdwds.	225	625	1,022	353	289	2,514
Upland hdwds[2]	--	--	--	1	20	21
Scrub oak	--	--	--	--	25	25
All hdwd. types	225	625	1,022	354	334	2,560
All types	255	2,603	3,641	628	1,766	8,893
Percent	2.9	29.3	40.9	7.1	19.8	100.0

ROUGH AND ROTTEN CULLS (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	--	207	48	13	376	644
Slash pine	11	24	17	--	143	195
Loblolly pine	1	9	3	1	8	22
Pond pine	--	--	--	--	1	1
Sand pine	--	--	10	--	5	15
Cypress	--	290	165	30	11	496
All sftwd. types	12	530	243	44	544	1,373
Lowland hdwds.	152	379	687	361	677	2,256
Upland hdwds.[3]	--	--	--	12	230	242
Scrub oak	--	--	--	--	696	696
All hdwd. types	152	379	687	373	1,603	3,194
All types	164	909	930	417	2,147	4,567
Percent	3.6	19.9	20.4	9.1	47.0	100.0

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[1] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

[2] Includes 1,000 cords in palm type.

[3] Includes 4,000 cords in palm type.

Table 12.--Net volume[1] of all trees by species and diameter class, 1949

SOUND TREES (in thousand cubic feet)

Species	Pole trees		Saw-timber trees				All diameter
	6 inches	8 inches	10 inches	12 inches	14 18 inches	20 + inches	
Softwoods:							
Longleaf pine	38,178	102,207	92,520	55,816	26,506	642	315,86
Slash pine	33,737	57,537	55,201	51,572	55,354	11,471	264,87
Loblolly pine	305	690	774	4,798	5,576	--	12,14
Pond pine	1,951	939	1,159	3,184	3,113	1,063	11,40
Other pines	2,741	1,901	383	1,243	--	--	6,26
Total	76,912	163,274	150,037	116,613	90,549	13,176	610,56
Cypress	92,827	91,486	55,038	47,729	48,665	823	336,56
Cedar	1,018	614	1,914	1,185	1,823	--	6,55
Total sftwds.	170,757	255,374	206,989	165,527	141,037	13,999	953,68
Hardwoods:							
Tupelo	9,563	12,295	12,433	11,250	19,473	8,760	73,77
Sweetgum	3,344	7,795	8,145	6,379	17,770	3,728	47,16
Soft maple	11,253	12,207	9,281	4,359	9,776	2,643	49,51
Other soft hdwds.	5,624	8,108	8,498	5,875	14,738	4,201	47,04
Total	29,784	40,405	38,357	27,863	61,757	19,332	217,49
Red oaks	6,777	7,525	5,544	3,607	8,533	7,109	39,09
White oaks	368	1,907	2,271	1,108	2,358	8,941	16,95
Hickory	590	556	472	146	1,540	2,552	5,85
Ash	3,729	8,506	4,480	4,192	7,628	378	28,91
Holly, dogwood	630	152	—	—	—	--	78
Other hard hdwds.	3,181	4,484	2,838	2,595	4,180	630	17,90
Total	15,275	23,130	15,605	11,648	24,239	19,610	109,50
Total hdwds.	45,059	63,535	53,962	39,511	85,996	38,942	327,00
All species	215,816	318,909	260,951	205,038	227,033	52,941	1,280,68
Percent	16.9	24.9	20.4	16.0	17.7	4.1	100.0

TREES OF OTHER QUALITY CLASSES (in thousand cubic feet)

Species	6 inches	8 inches	10 inches	12 inches	14 18 inches	20 + inches	All diameter
Rough culls							
Softwoods	14,604	9,588	6,445	7,027	5,484	5,375	48,52
Hardwoods[2]	93,549	67,899	64,129	78,288	82,433	71,548	457,84
Rotten culls	9,950	19,184	19,493	21,549	58,504	68,695	197,37
Palms	12,027	54,525	165,046	111,380	26,486	--	369,46
All other classes	130,130	151,196	255,113	218,244	172,907	145,618	1,073,20

[1] Excluding bark.

[2] Includes scrub oak and noncommercial species.

Table 13.--Net volume[1] of all trees by species and class of material, 1949

(in thousand cubic feet)

Species	SOUND TREES				CULL TREES	
	Saw timber trees		Pole timber trees	Total sound trees	Rough	Rotten
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	143,796	31,688	140,385	315,869	3,645	1,519
Slash pine	141,668	31,930	91,274	264,872	9,128	1,315
Loblolly pine	8,997	2,151	995	12,143	955	-
Pond pine	6,903	1,616	2,890	11,409	1,413	114
Other pines	1,313	313	4,642	6,268	4,158	--
Total	302,677	67,698	240,186	610,561	19,299	2,948
Cypress	125,405	26,850	184,313	336,568	24,163	39,331
Cedar	3,954	968	1,632	6,554	5,061	230
Total sftwds.	432,036	95,516	426,131	953,683	48,523	42,509
Hardwoods:						
Tupelo	32,294	7,189	34,291	73,774	20,134	20,576
Sweetgum	22,692	5,185	19,284	47,161	22,090	6,575
Soft maple	13,671	3,107	32,741	49,519	43,409	30,965
Other soft hdwds.	20,382	4,432	22,230	47,044	28,879	13,415
Total	89,039	19,913	108,546	217,498	114,512	71,531
Red oaks	15,751	3,498	19,846	39,095	47,919	36,813
White oaks	10,046	2,361	4,546	16,953	125,401	25,789
Hickory	3,439	799	1,618	5,856	2,052	631
Ash	9,994	2,204	16,715	28,913	26,018	15,170
Holly, dogwood	-		782	782	240	134
Scrub oak[2]			-	-	130,749	-
Other hard hdwds.	6,030	1,375	10,503	17,908	10,955	4,798
Total	45,260	10,237	54,010	109,507	343,334	83,335
Total hdwds.	134,299	30,150	162,556	327,005	457,846	154,866
All species	566,335	125,666	588,687	1,280,688	506;369	197,375
Percent	44.2	9.8	46.0	100.0	72.0	28.0

[1] Excluding bark and volume of palms shown in table 12.

[2] Includes noncommercial species.

Table 14.--Average volume[1] per acre of saw timber by forest type, species group, and stand size, 1949

(in board feet)

Forest type and species group	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine						
Softwood	--	2,770	539	113	187	324
Hardwood	--	7	--	--	--	1
Slash pine						
Softwood	4,009	3,360	1,057	128	360	675
Hardwood	--	75	8	--	2	8
Loblolly pine						
Softwood	3,352	1,744	672	--	1,504	1,492
Hardwood	--	395	--	240	--	44
Pond pine						
Softwood	2,648	3,190	756	457	121	371
Hardwood	--	--	--	--	--	--
Sand pine						
Softwood	--	--	--	100	96	90
Hardwood	--	--	--	--	--	--
Cypress						
Softwood	--	3,931	745	293	937	2,079
Hardwood	--	516	23	29	---	237
Lowland hardwoods						
Softwood	231	767	228	152	84	244
Hardwood	3,472	2,826	587	270	167	969
Upland hardwoods						
Softwood	--	--	--	--	46	45
Hardwood	--	--	--	--	15	15
Scrub oak						
Softwood	--	--	--	--	79	79
Hardwood	--	--	--	--	--	--
All types						
Softwood	1,008	2,700	562	164	208	446
Hardwood	2,701	912	143	122	12	141

[1] Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand size, 1949

(in standard cords)

Forest type and species group	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[2]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	--	--	10.4	(3/)	5.2	0.1	0.9	0.1	1.7	0.1
Hardwood	--	--	0.3	2.3	(3/)	0.2	(3/)	0.3	(3/)	0.4
Slash pine										
Softwood	10.9	0.3	12.5	0.3	8.1	--	1.6	0.1	3.1	0.1
Hardwood	--	1.0	0.4	1.0	0.1	0.2	(3/)	0.1	(3/)	0.2
Loblolly pine										
Softwood	9.9	--	5.5	--	2.3	--	4.1	0.4	4.4	0.3
Hardwood	0.8	10.3	7.6	7.0	0.8	4.2	0.3	2.0	0.9	3.0
Pond pine										
Softwood	9.2	--	7.7	0.6	6.1	--	0.6	0.3	1.3	0.3
Hardwood	--	--	--	--	--	--	--	--	--	--
Sand pine										
Softwood	--	--	--	--	10.5	1.9	0.5	0.2	1.1	0.3
Hardwood	--	--	--	--	--	--	--	(3/)	--	(3/)
Cypress										
Softwood	--	--	19.6	2.4	10.8	1.9	4.5	2.0	13.5	2.1
Hardwood	--	--	2.9	2.5	0.2	0.3	0.2	0.6	1.4	1.3
Lowland hardwoods										
Softwood	0.8	0.2	2.7	0.3	1.5	0.4	0.5	0.2	1.1	0.2
Hardwood	11.7	8.9	12.4	9.3	7.3	9.0	1.9	5.4	5.5	7.0
Upland hardwoods										
Softwood	--	--	--	--	--	--	0.1	--	0.1	--
Hardwood	--	--	--	--	--	--	0.1	3.5	0.1	3.5
Scrub oak										
Softwood	--	--	--	--	--	--	0.3	(3/)	0.3	(3/)
Hardwood	--	--	--	--	--	--	--	1.5	--	1.5
All types										
Softwood	3.0	0.2	11.5	0.9	5.7	0.4	0.9	0.1	2.3	0.2
Hardwood	9.2	7.4	4.3	3.9	1.7	2.3	0.2	1.0	0.8	1.5

[1] Sound wood and bark, excluding volume of palms.

[2] Sound trees; cull trees.

[3] Less than 0.05 cords per acre.

Table 16.--Average volume[1] per acre of pole timber trees by forest type, species group, and stand size, 1949

(in standard cords)

Forest type and species group	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[2]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	--	--	2.7	--	3.7	(3/)	4.4	(3/)	0.8	(3/)
Hardwood	--	--	0.2	2.1	(3/)	0.2	(3/)	0.2	(3/)	0.2
Slash pine										
Softwood	1.4	--	3.2	(3/)	5.1	--	0.7	0.1	1.2	0.1
Hardwood	--	0.8	0.2	0.3	0.1	0.2	(3/)	(3/)	(3/)	0.1
Loblolly pine										
Softwood	1.1	--	0.9	--	0.8	--	0.5	--	0.6	--
Hardwood	0.8	0.4	6.1	2.6	0.8	1.1	0.3	0.2	0.8	0.5
Pond pine										
Softwood	2.3	--	--	--	3.8	--	0.1	(3/)	0.3	(3/)
Hardwood	--	--	--	--	--	--	--	--	--	--
Sand pine										
Softwood	--	--	--	--	10.5	1.9	0.2	(3/)	0.8	0.2
Hardwood	--	--	--	--	--	--	--	(3/)	--	(3/)
Cypress										
Softwood	--	--	9.5	0.9	8.9	1.2	3.3	0.4	8.2	0.9
Hardwood	--	--	1.6	1.4	0.1	0.3	0.2	0.4	0.8	0.8
Lowland hardwoods										
Softwood	0.2	--	0.8	(3/)	0.9	(3/	0.2	0.1	0.4	0.1
Hardwood	3.2	2.3	4.9	3.4	5.7	4.4	1.4	2.5	3.0	3.0
Upland hardwoods										
Softwood	--	--	--	--	--	--	(3/)	--	(3/)	--
Hardwood	--	--	--	--	--	--	0.1	0.9	0.1	0.9
Scrub oak										
Softwood	--	--	--	--	--	--	(3/)	(3/)	(3/)	(3/)
Hardwood	--	--	--	--	--	--	--	1.2	--	1.2
All types										
Softwood	0.5	--	4.3	0.3	4.1	0.2	0.4	(3/)	1.1	0.1
Hardwood	2.5	1.9	1.9	1.9	1.4	1.2	0.1	0.5	0.4	0.7

[1] Sound wood and bark, excluding volume of palms.

[2] Sound trees; cull trees.

[3] Less than 0.05 cords per acre.

Table 17.--Number[1] of turpentine pine trees by working status and tree size, 1949

(in thousands of trees)

Working status	Pole size trees	Small saw-timber trees	Large saw-timber trees	All trees
Round timber[2]	45,006	19,068	714	64,788
Working timber[3]	--	775	45	820
Resting timber	639	2,874	219	3,732
Abandoned timber	44	916	79	1,039
Worked-out timber	11	536	138	685
All classes	45,700	24,169	1,195	71,064

[1] Includes sound and rough cull trees.

[2] In 1936 there were 19,137,000 round trees 9.0 inches d.b.h. and larger compared to 19,782,000 in 1949.

[3] In 1936 there were 2,434,000 working trees compared to 820,000 in 1949.

Table 18.--Area of turpentine timber crops by working status, 1949

Crop working status	Area	
	Acres	Percent
Round timber	221,700	49.5
Working timber		
Front-faced	21,600	4.8
Back-faced	17,500	3.9
Resting timber	87,000	19.4
Abandoned timber	81,700	18.3
Worked-out timber	18,300	4.1
All classes	447,800	100.0

Table 19.--Area of stump land and tonnage of wood naval stores stumps by availability class, 1949

Availability class	Area	Tonnage[1]
	Acres	Thousand tons
Merchantable area	3,121,100	[4] 8,344
Marginal area[2]	44,500	74
Potential area[3]	81,500	170
Inaccessible area	27,600	80
All classes	3,274,700	8,668

[1] Includes stumps on agricultural land.

[2] Stump-land areas less than 25 acres in extent and partially worked areas.

[3] Unworkable at present due to density of timber stands.

[4] A check on the tons of stumps harvested under existing practices indicates the recoverable tonnage is approximately two-thirds of the merchantable volume shown.

Table 20.--Number of trees[1/] by species group, quality class, and tree size, 1949

(in thousands of trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small saw-timber trees	Large saw-timber trees	All trees
Yellow pines:					
Sound trees	83,552	46,225	25,204	1,211	156,192
Rough culls	2,432	2,032	542	78	5,084
Rotten culls	1,187	46	214	52	1,499
Total	87,171	48,303	25,960	1,341	162,775
Other softwoods:					
Sound trees	97,337	37,751	11,240	359	146,687
Rough culls	8,807	3,151	676	97	12,731
Rotten culls	2,446	1,698	1,478	571	6,193
Total	108,590	42,600	13,394	1,027	165,611
Soft-textured hdwds.:					
Sound trees	86,614	20,216	4,292	873	111,995
Rough culls	42,731	11,685	1,305	141	55,862
Rotten culls	13,439	7,072	2,314	460	23,285
Total	142,784	38,973	7,911	1,474	191,142
Hard-textured hdwds.:					
Sound trees	63,155	11,059	2,085	622	76,921
Rough culls[2/]	215,128	48,116	5,877	1,530	270,651
Rotten culls	9,290	5,736	1,968	826	17,820
Total	287,573	64,911	9,930	2,978	365,392
Palms	(3/)	9,918	19,214	16	29,148
All species	626,118	204,705	76,409	6,836	914,068

1/ All trees 1.0 inch d.b.h. and larger.

2/ Includes scrub oak and noncommercial trees.

3/ Data not recorded.

Table 21.--Area of poorly stocked stands and unstocked areas by plantability classes, 1949

Forest type[1]	No planting required[2]	Suitable for machine planting	Hand planting required	All classes
	Acres	Acres	Acres	Acres
Longleaf pine	679,200	1,368,100	46,000	2,093,300
Slash pine	363,400	473,300	64,400	901,100
Loblolly pine	8,500	13,000	12,100	33,600
Pond pine	10,800	40,700	--	51,500
Sand pine	7,900	38,400	25,600	71,900
Upland hdwds.	71,500	49,400	51,900	172,800
Scrub oak	75,400	370,200	109,800	555,400
All types	1,216,700	2,353,100	309,800	3,879,600
Percent	31.4	60.6	8.0	100.0

1/ Lowland types not classified.

2/ Sufficient seed trees present or area is restocking naturally.

Table 22.--Commercial forest area by forest type and degree of stocking, 1949

STOCKING IN SOUND TREES

Forest type	Degree of stocking[1] 0-9 percent	10-39 percent	40-69 percent	70-99 percent	100 + percent	Total area
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	1,784,400	642,300	137,000	7,700	--	2,571,400
Slash pine	705,200	323,100	86,200	7,500	9,700	1,131,700
Loblolly pine	2,700	30,800	11,400	--	--	44,900
Pond pine	49,800	11,800	10,700	--	--	72,300
Sand pine	56,300	21,400	7,800	--		85,500
Cypress	5,100	41,400	60,700	55,400	124,700	287,300
Lowland hdwds.	162,400	214,600	202,300	73,100	87,800	740,200
Upland hdwds.	137,100	38,100	--	2,700	--	177,900
Scrub oak	522,500	32,900			--	555,400
Palm	80,600	--	--	--	--	80,600
All types	3,506,100	1,356,400	516,100	146,400	222,200	5,747,200
Percent	61.0	23.6	9.0	2.5	3.9	100.0

STOCKING IN TREES OF ALL QUALITY CLASSES[2]

Forest type	0-9 percent	10-39 percent	40-69 percent	70-99 percent	100 + percent	Total area
Longleaf pine	1,631,700	661,600	183,100	80,800	14,200	2,571,400
Slash pine	650,100	343,200	101,100	19,200	18,100	1,131,700
Loblolly pine	--	--	5,300	18,700	20,900	44,900
Pond pine	41,900	11,800	13,100	--	5,500	72,300
Sand pine	47,900	16,300	18,600	--	2,700	85,500
Cypress	5,100	21,600	32,600	70,200	157,800	287,300
Lowland hdwds.	82,000	87,900	98,200	161,900	310,200	740,200
Upland hdwds.	29,000	61,600	31,300	26,200	29,800	177,900
Scrub oak	198,400	203,900	119,800	12,600	20,700	555,400
Palm	43,200	36,600	--	--	800	80,600
All types	2,729,300	1,444,500	603,100	389,600	580,700	5,747,200
Percent	47.5	25.1	10.5	6.8	10.1	100.0

1/ Includes trees 1.0 inch d.b.h. and larger.

2/ Includes sound trees, cull trees, and palms.

Table 23 --County area by broad use class, 1949

County	Total area1/	Non-forest area		Forest land		
		Land	Water	Non-commercial2/	Commercial	
	Acres	Acres	Acres	Acres	Acres	Percent
Brevard	839,000	373,500	190,500	37,100	237,900	36.7
Citrus	423,100	59,200	50,000	3,700	310,200	83.1
De Soto	416,600	242,000	3,700	17,400	153,500	37.2
Hardee	403,200	113,000	6,800	2,800	280,600	70.8
Hernando	325,100	45,000	16,200	1,700	262,200	84.9
Highlands	716,200	331,800	56,800	24,800	302,800	45.9
Hillsborough	679,700	233,100	22,300	8,800	415,500	63.2
Indian River	350,700	211,500	20,100	20,800	98,300	29.7
Lake	744,300	177,900	143,200	29,500	393,700	65.5
Manatee	502,400	153,300	40,600	3,100	305,400	66.1
Okeechobee	499,200	325,300	61,000	8,600	104,300	23.8
Orange	641,900	115,800	63,900	12,200	450,000	77.9
Osceola	938,900	358,900	88,600	7,100	484,300	57.0
Pasco	494,100	98,900	36,100	9,100	350,000	76.4
Pinellas	197,800	81,400	37,900	3,400	75,100	47.0
Polk	1,310,700	403,700	113,200	22,800	771,000	64.4
St. Lucie	400,600	184,000	54,400	--	162,200	46.9
Sarasota	396,800	143,000	37,100	8,100	208,600	58.0
Seminole	225,300	65,300	26,100	--	133,900	67.2
Sumter	367,400	83,200	25,500	11,000	247,700	72.4
Unit total	10,873,000	3,799,800	1,094,000	232,000	5,747,200	58.8

1/ Gross area from Bureau of the Census, 1940.

2/ Non-productive forest land plus forest land withdrawn from commercial use.

Table 24.--Ownership of commercial forest land by county, 1949

County	Private		Public					
			National forest	Other federal	State	County, city, town	Total public	
	Acres	Percent	Acres	Acres	Acres	Acres	Acres	Percent
Brevard	227,900	95.8	--	1,200	5,300	3,500	10,000	4.2
Citrus	267,500	86.2	--	40,700	2,000	--	42,700	13.8
De Soto	152,700	99.5	--	100	500	200	800	0.5
Hardee	279,600	99.6	--	--	1,000	(1/)	1,000	0.4
Hernando	223,500	85.2	--	36,600	600	1,500	38,700	14.8
Highlands	272,400	90.0	--	26,400	3,000	1,000	30,400	10.0
Hillsborough	412,300	99.2	--	1,200	--	2,000	3,200	0.8
Indian River	91,100	92.7	--	600	4,500	2,100	7,200	7.3
Lake	319,700	81.2	65,500	1,000	3,300	4,200	74,000	18.8
Manatee	297,800	97.5	--	100	7,400	100	7,600	2.5
Okeechobee	103,400	99.1	--	(1/)	600	300	900	0.9
Orange	448,200	99.6	--	400	900	500	1,800	0.4
Osceola	483,300	99.8	--	100	500	400	1,000	0.2
Pasco	342,700	97.9	--	6,800	400	100	7,300	2.1
Pinellas	74,000	98.5	--	200	200	700	1,100	1.5
Polk	745,600	96.7	--	21,600	100	3,700	25,400	3.3
St. Lucie	160,400	98.9	--	--	1,000	800	1,800	1.1
Sarasota	204,000	97.8	--	100	4,100	400	4,600	2.2
Seminole	131,500	98.2	--	600	400	1,400	2,400	1.8
Sumter	214,100	86.4	--	32,700	900	--	33,600	13.6
Unit total	5,451,700	94.9	65,500	170,400	36,700	22,900	295,500	5.1

1/ Less than 50 acres.

Table 25.--Net volume[1] of saw timber by county and species group, 1949

(in thousand board feet)

County	Softwoods[2]	Tupelo, sweet-gum, and soft maple[3]	Other hardwoods	All species
Brevard	88,700	1,500	700	90,900
Citrus	195,800	76,200	21,400	293,400
De Soto	50,000	3,600	400	54,000
Hardee	61,600	35,900	14,300	111,800
Hernando	139,700	53,600	55,500	248,800
Highlands	68,800	26,500	--	95,300
Hillsborough	181,100	27,700	45,100	253,900
Indian River	56,500	1,200	--	57,700
Lake	191,900	49,400	9,800	251,100
Manatee	74,800	33,400	1,700	109,900
Okeechobee	94,400	9,000	4,100	107,500
Orange	256,100	20,000	5,900	282,000
Osceola	174,700	32,500	2,600	209,800
Pasco	130,500	19,300	18,900	168,700
Pinellas	29,600	--	--	29,600
Polk	342,400	47,800	19,000	409,200
St. Lucie	81,700	7,300	--	89,000
Sarasota	99,900	100	--	100,000
Seminole	59,700	42,000	17,400	119,100
Sumter	149,100	41,400	54,800	245,300
Unit total	2,527,000	528,400	271,600	3,327,000

[1] Log scale, International 1/4-inch rule.

[2] Includes pine, cypress, and cedar.

[3] Includes other soft-textured hardwoods.

Table 26.--Net volume[1] of saw timber by county, broad species group, and diameter class group, 1949

County	Softwoods		Hardwoods		Soft-woods	Hard-woods
	9-14 inches	15 + inches	11-16 inches	17 + inches		
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent	Percent
Brevard	80,700	8,000	400	1,800	97.6	2.4
Citrus	177,900	17,900	51,100	46,500	66.7	33.3
De Soto	48,700	1,300	4,000	--	92.6	7.4
Hardee	57,900	3,700	18,300	31,900	55.1	44.9
Hernando	124,300	15,400	60,600	48,500	56.1	43.9
Highlands	59,500	9,300	16,100	10,400	72.2	27.8
Hillsborough	172,200	8,900	42,500	30,300	71.3	28.7
Indian River	54,800	1,700	1,200	--	97.9	2.1
Lake	156,500	35,400	43,200	16,000	76.4	23.6
Manatee	45,500	29,300	23,900	11,200	68.1	31.9
Okeechobee	84,800	9,600	5,100	8,000	87.8	12.2
Orange	192,800	63,300	22,300	3,600	90.8	9.2
Osceola	161,700	13,000	29,600	5,500	83.3	16.7
Pasco	129,500	1,000	16,300	21,900	77.4	22.6
Pinellas	20,700	8,900	--	--	100.0	--
Polk	311,200	31,200	46,700	20,100	83.7	16.3
St. Lucie	77,700	4,000	7,300	--	91.8	8.2
Sarasota	87,200	12,700	100	--	99.9	0.1
Seminole	44,000	15,700	46,800	12,600	50.1	49.9
Sumter	131,000	18,100	57,400	38,800	60.8	39.2
Unit total	2,218,600	308,400	492,900	307,100	76.0	24.0

[1] Log scale, International 1/4-inch rule.

Table 27.--Net volume[1] of all trees by county, pulping-species groups, and tree diameter groups, 1949

SOUND TREES (in thousand cords)

County	Yellow pines		Tupelo, sweetgum and soft maple[2]		Other species		All species
	5-12 inches	13 + inches	5-12 inches	13 + inches	5-12 inches	13 + inches	
Brevard	364	26	3	4	18	2	417
Citrus	484	89	108	167	277	128	1,253
De Soto	187	2	53	--	151	15	408
Hardee	332	21	151	78	55	38	675
Hernando	278	98	159	96	350	141	1,122
Highlands	392	31	133	50	68	--	674
Hillsborough	574	48	86	51	291	131	1,181
Indian River	149	13	6	--	64	17	249
Lake	546	153	150	104	412	48	1,413
Manatee	341	71	44	70	14	4	544
Okeechobee	346	13	40	15	122	64	600
Orange	525	213	152	42	524	59	1,515
Osceola	424	24	172	44	645	97	1,406
Pasco	449	25	65	36	349	52	976
Pinellas	69	32	--	--	17	1	119
Polk	1,010	151	280	89	810	110	2,450
St. Lucie	187	38	75	9	169	44	522
Sarasota	201	125	--	--	1	--	327
Seminole	109	46	135	65	127	49	531
Sumter	375	75	225	88	479	140	1,382
Unit total	7,342	1,294	2,037	1,008	4,943	1,140	17,764
ROTTEN AND ROUGH CULLS (in thousand cords)							
Brevard	20	4	--	4	63	35	126
Citrus	2	--	61	71	444	369	947
De Soto	--	--	55	9	140	45	249
Hardee	4	--	27	25	118	77	251
Hernando	--	--	94	68	454	211	827
Highlands	10	--	69	23	14	11	127
Hillsborough	16	--	59	24	334	247	680
Indian River	1	--	10	--	93	13	117
Lake	82	33	169	127	459	230	1,100
Manatee	8	--	30	25	74	63	200
Okeechobee	1	--	34	22	26	34	117
Orange	1	--	139	79	467	32	718
Osceola	13	--	188	110	328	395	1,034
Pasco	--	--	59	33	338	103	533
Pinellas	1	--	--	--	8	14	23
Polk	52	--	253	73	376	116	870
St. Lucie	25	--	56	8	13	40	142
Sarasota	5	18	4	1	51	40	119
Seminole	13	--	43	51	143	146	396
Sumter	6	--	333	158	236	396	1,129
Unit total	260	55	1,683	911	4,179	2,617	9,705

[1] Sound wood and bark, excluding volume of palms. Limbs of sound saw-log-size hardwoods are included in cull volumes.

[2] Includes bay, magnolia, and yellow-poplar.

DEFINITION OF TERMS

Land-Use Classes

Forest. Land bearing forest growth, land from which the forest has been removed and which shows no evidence of any other recent land use, or former agricultural land which now has a five-percent stocking of trees. Subdivided into the following classes:

> Commercial: Land bearing, or capable of bearing, timber of commercial character and available now or prospectively for commercial use.
>
> Reserved: Forest land in public ownership upon which commercial timber cutting is prohibited.
>
> Non-productive: Forest land of such low productivity or so inaccessible that commercial timber will not be produced.

Non-forest. Land less than five percent stocked with trees and showing evidence of non-forest use.

> Agriculture: Under cultivation or in pasture, including farm yards on active farms.
>
> Idle: Land previously cultivated or pastured but now idle or abandoned. If reverting to forest there must be less than five percent stocking of trees.
>
> Marsh: Low, boggy, non-forested land usually supporting a heavy growth of grass.
>
> Dunes and beaches: Non-forested sand dunes or coastal beaches.
>
> Urban and other: Includes towns, suburban areas being developed for residential or other urban purposes, school yards, cemeteries, industrial sites, roads, railroads, power lines, and other rights-of-way. Scattered areas of timber within exterior boundaries of cities or villages are also included.
>
> Water: Includes both the small ponds and lakes less than 40 acres in size and streams, sloughs, and canals less than ten chains in width classed as "land area" by the Bureau of the Census. Also includes the "inland water" listed by the Census. On coastal areas the water-line is the mean high-tide mark; tidal flats are classed as water.

Forest Types

Longleaf pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with longleaf pine predominating.

Slash pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with slash pine predominating.

Loblolly pine. Stands in which coniferous species comprise at least 25 percent of the dominant trees, with loblolly pine predominating. Stands of spruce pine and redcedar are included in this type.

Pond pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees with pond pine predominating.

Sand pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees with sand pine predominating.

Cypress. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with cypress predominating. White cedar is also included with this type.

Lowland hardwoods. Stands in which mixed hardwoods such as tupelo gum, black-gum, sweetgum, white oak, water oak, red maple, and ash comprise at least 75 percent of the dominant and codominant trees. Found along rivers, small streams, and in swamps and bays.

Upland hardwoods. Stands in which mixed hardwoods such as red oak, white oak, post oak, hickory, ash, sweetgum, elm, and yellow-poplar comprise at least 75 percent of the dominant and codominant trees. Found on the drier upland sites and on low rolling hills bordering the flatwood zone.

Scrub oak. Stands in which scrub species such as blackjack, bluejack, turkey and laurel oaks predominate and in which sound commercial species comprise less than five percent of satisfactory stocking.

Palms. Stands in which there is at least a five-percent stocking of merchantable palm trees and less than five-percent stocking of other sound commercial species.

Stand-Size Classes

Saw timber. Stands containing at least 1,500 board feet net, International 1/4-inch log rule, per acre in sound, live, softwood trees 9.0 inches d.b.h. or larger or hardwood trees 11.0 inches d.b.h. or larger. Two classes of saw-timber stands are recognized:

Large saw timber: Stands of saw timber having more than 50 percent of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Small saw timber: Stands of saw timber having 50 percent or less of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Pole timber. Stands at least 10 percent stocked with pole-size or larger timber, with at least one-half the minimum stocking in pole sizes, and which have less than 1,500 board feet net per acre of saw timber.

Seedling and sapling. Stands less than 10 percent stocked by pole-size or larger trees and with less than 1,500 board feet net per acre, but at least 40 percent stocked with commercial species. Eight hundred seedlings or saplings per acre are considered full stocking.

Poorly stocked and unstocked. Stands of pole-size or larger trees that are less than 10 percent stocked, seedling or sapling stands less than 40 percent stocked, or nonstocked forest land.

Diameters

D.b.h. (diameter at breast height). Stem diameter in inches, outside bark, measured at $4\frac{1}{2}$ feet above the ground.

Diameter class. All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint; e.g., trees 7.0 to and including 8.9 inches are in the 8-inch class.

Tree Classification

Sound saw-timber trees. Softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound saw timber.

Sound pole timber trees. Straight-boled trees between 5.0 inches d.b.h. and saw-timber size.

Sound sapling-size trees. Trees 1.0 inch to 4.9 inches d.b.h. which will grow into pole or saw-timber size trees of sound quality.

Rough cull trees. Trees that fail to qualify as sound timber because of poor form, excessive limbiness, or other sound defect. Volumes shown for rough cull trees also include the limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of sound saw-timber-size hardwoods. Scrub oak and noncommercial species are included in this group.

Rotten cull trees. Trees that fail to qualify as sound timber because of rotten defect.

Palms. All species of Sabal 5.0 inches d.b.h. and larger with at least 12 feet of clear stem. All palm trees were considered to be free of rotten defect.

Species Groups

Softwoods. All of the pines, eastern redcedar, Atlantic white-cedar, pond cypress, and baldcypress.

Soft hardwoods. Black and water tupelos, sweetgum, and soft maple. The other soft textured hardwoods include sweetbay, cottonwood, willow, basswood, southern magnolia, and yellow-poplar.

Hard hardwoods. All of the oaks, hickories, and ash. The other hard-textured hardwoods include river birch, elm, hackberry, and sycamore.

Volume Estimates

Board-foot volume. The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of saw-timber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords. For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. For cull trees similar volumes are included plus the volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of saw-timber size hardwoods.

Volume in cubic feet. Same as volume shown in cords except bark is not included.

International 1/4-inch log rule. A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord. A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, 90 cubic feet of softwoods (wood and bark) or 80 cubic feet of hardwoods (wood and bark).

Gum Naval Stores Conditions

Round timber. A minimum of 15 longleaf and slash pine trees 9.0 inches d.b.h. or larger per acre that have never been worked for naval stores.

Working. Longleaf and slash pine trees that are now being worked for naval stores.

Front-faced. Turpentine tree species on which the front or first face is now being worked.

Back-faced. Turpentine tree species on which the front face has been worked out and on which a back (second or third, etc.) face is being worked.

Resting. Longleaf and slash pine trees with a worked-out front face at least 5 feet high and on which back-facing has not been started.

Abandoned. Longleaf and slash pine trees on which faces less than 5 feet high were discontinued.

Worked-out. Longleaf and slash pine trees on which two or more faces at least 5 feet high have been worked out and with no possibility of supporting another face.

Stocking

Stocking classifications were based on the number of stems present by d.b.h. classes. Areas having the minimum numbers of trees listed below, either in a single diameter class or in combinations, were considered adequately stocked.

DBH	Minimum number trees per acre
2 inches	800
4 inches	600
6 inches	450
8 inches	300
10 inches	200
12 inches	150
14 inches	110

RELIABILITY OF THE DATA

In general there are two possible sources of error in estimating timber volumes and land areas in various categories under procedures used by the Forest Survey. These are (1) common mistakes resulting from errors of judgment in classifying or recording data, mistakes made in compiling the information or bias in the application of techniques, and (2) sampling errors.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of the data. Common errors are eliminated or minimized through training and frequent check cruises in the field and through complete editing and machine verification of office procedures in compiling the data.

Sampling errors (standard errors of estimate) carry no connotation of faulty work but are theoretical measures of the reliability of the estimates based on the variability exhibited by the sample data. Sampling errors were the only measurable errors involved in computing the reliability of the data.

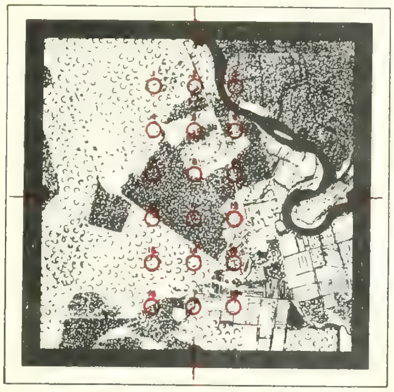
Forest area. The sampling intensity was sufficient to provide an estimate of the forest acreage of the Unit with a standard error of ± 0.9 percent. This indicates the probabilities are two out of three that the actual forest area is within ± 0.9 percent of the given estimate.

Timber volumes. The standard error of estimate of the board-foot volume of saw timber in the Unit is ± 3.0 percent. Here again, the probabilities are two out of three that the actual volume is ± 3.0 percent of the given estimate. Corresponding errors for the total volume in cords or cubic feet were not computed, but they should be smaller.

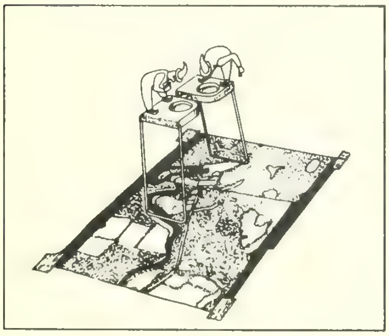
Use of county data. The tables showing area and timber volumes by county are included to facilitate the grouping of county data in any combination desired. Statistics for individual counties have a standard error of estimate for forest area ranging from ± 2.5 to ± 12.0 percent, and for board-foot volume from ± 13.0 to ± 18.0 percent. Obviously, detailed comparisons between counties are subject to considerable error and should be avoided. Grouping a number of counties together will increase the reliability of the area and volume estimates and make these data sufficiently accurate for most general purposes.

HOW THE FOREST INVENTORY IS MADE

The present system of inventory is based upon interpretation of aerial photographs supplemented by cruising of randomly selected ground plots. The county is the basic work unit. Steps in the procedure are as follows:

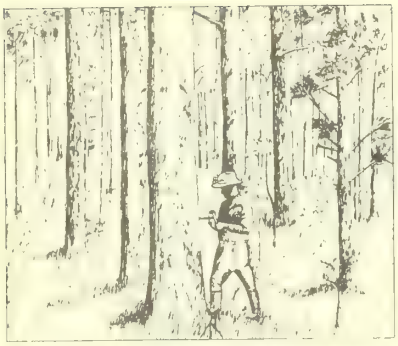


1. Acreages of forest land are estimated with the use of a dot grid placed on every 3rd contact print along flight lines in each county. The proportion of dots falling on forest areas when applied to the gross area of the county yields a preliminary estimate of the acreage of forest land. This is later revised after certain field checks.

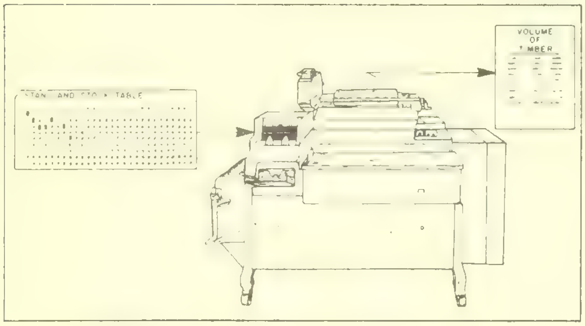


2. Every 3rd plot listed as forest in step one is classified into forest type, stand class, and density class by careful stereoscopic analysis of the photographs. The proportion of plots falling in each classification when applied to the forest area of the county gives the area in each classification. These areas are revised following ground checking.

3. Timber cruisers make a detailed on-the-ground tally of every 3rd large sawtimber photo plot, every 4th small sawtimber, every 6th pole timber, every 13th seedling and sapling plot, and every 26th poorly stocked plot, to obtain volume, growth, cull and mortality data, and to check accuracy of photo classification. They also check a sample of the idle and agricultural plots to determine the area reverting to forest.



4. Growth estimates are based on increment borings taken from trees of the various diameters and species in each forest type and stand class.



5. All field data are sent to the Asheville office for editing and are placed on punch cards for machine tabulation. Statistical techniques are used to correct for changes in photo classification, and to determine final figures on areas, volumes, and growth.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia.

No. 22 - Southern Forests as a Source of Pulpwood.

No. 23 - 1946 Pulpwood Production by County in the Southeast.

No. 24 - Southern Pulpwood Production and the Timber Supply.

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina.

No. 26 - 1946 Commodity Drain by County from South Carolina Forests.

No. 27 - 1947 Pulpwood Production by County in the Southeast.

No. 28 - South Carolina's Forest Resources, 1947.

No. 29 - 1948 Pulpwood Production by County in the Southeast.

No. 30 - Forest Resources of Northeast Florida, 1949.

FOREST SURVEY RELEASE NO. 32 JANUARY 15, 1950

FOREST RESOURCES OF NORTHWEST FLORIDA, 1949

by J. F. Mc Cormack, Forester
Division of Forest Economics

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA

I. T. HAIG, Director

In cooperation with
FLORIDA FOREST SERVICE
TALLAHASSEE, FLORIDA
C. H. COULTER, State Forester

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

The State of Florida was inventoried by the Forest Survey in the period 1934-36 and reports presenting the findings have been published. Since then, better forest management, more intensive forest use, changes in land use, and other factors have caused changes in the forest growing stock that can only be measured accurately by on-the-ground surveys. Field work on a resurvey of the forest resources of Florida was completed in August 1949. This progress report presents area and volume statistics of the resurvey in Northwest Florida (Survey Unit No. 2). Statistical reports covering Northeast Florida (Survey Unit No. 1) and Central Florida (Survey Unit No. 3) have already been published. When complete statistical data for the State are available, an analytical report will be prepared which will interpret these statistics and focus attention upon the principal forest problems.

ACKNOWLEDGMENTS

The author gratefully acknowledges the assistance received from C. H. Coulter, State Forester, and his staff in facilitating the Survey work and in providing additional personnel to augment and intensify the collection of data in the field.

The Division of Forest Economics is under the direction of James W. Cruikshank. The timber inventory field work was under the supervision of Mackay B. Bryan. Photo interpretation work was done by N. F. Force, R. C. Aldrich, and R. W. Cooper. Sample plot work was under the direction of Fritz Lorentzen, E. W. Vetter, M. W. McClure, W. A. McCarty, H. W. Allen, E. A. Schluter, Ben Juskie, and F. S. Hill.

Office compilation of the data was under the direction of Miss Agnes Creasman, assisted by Mrs. Christine Paxton, Miss Priscilla Walker, and Miss Camilla Young.

CONTENTS

Page

1949 FACTS AND SIGNIFICANT CHANGES - 1

TABLES FOR THE SURVEY UNIT, 1949

AREA

1. Gross area by broad use class - 3
2. Ownership of land - 4
3. Commercial forest area by forest type and stand size - - - - - - 5

NET VOLUME OF SAW TIMBER

4. By species and stand size - 6
5. By species and diameter class - - - - - - - - - - - - - - - - - - - 7
6. By forest type and stand size - - - - - - - - - - - - - - - - - - - 8

NET VOLUME OF ALL TREES (in thousand cords)

7. By species and stand size - 9
8. By species and diameter class - - - - - - - - - - - - - - - - - - - 10
9. By species and class of material - - - - - - - - - - - - - - - - - - 11
10. By forest type and stand size - - - - - - - - - - - - - - - - - - - 12

NET VOLUME OF POLE TIMBER TREES (in thousand cords)

11. By forest type and stand size - - - - - - - - - - - - - - - - - - - 13

NET VOLUME OF ALL TREES (in thousand cubic feet)

12. By species and diameter class - - - - - - - - - - - - - - - - - - - 14
13. By species and class of material - - - - - - - - - - - - - - - - - - 15

AVERAGE VOLUME PER ACRE

14. Of saw timber by forest type, species group, and stand size - - 16
15. Of all trees by forest type, species group, and stand size - - 17
16. Of pole timber by forest type, species group, and stand size - 18

NAVAL STORES

17. Number of turpentine trees by working status and tree size - - 19
18. Area of turpentine timber crops by working status - - - - - - - - 19
19. Area of stump land and tonnage of wood naval stores stumps - - 20

GENERAL

20. Number of trees by species group, quality class, and tree size 21
21. Area of poorly stocked stands by plantability class - - - - - - - 22
22. Commercial forest area by forest type and degree of stocking - 23

TABLES FOR COUNTIES, 1949

23. County area by broad use class - - - - - - - - - - - - - - - - - - 24
24. Ownership of commercial forest land - - - - - - - - - - - - - - - - 25
25. Net volume of saw timber by species group - - - - - - - - - - - - 26
26. Net volume of saw timber by broad species group and diameter class - 27
27. Net volume of all trees by pulping species groups and tree diameter groups - 28

DEFINITION OF TERMS - 29

RELIABILITY OF THE DATA - 34

HOW THE FOREST INVENTORY IS MADE - 35

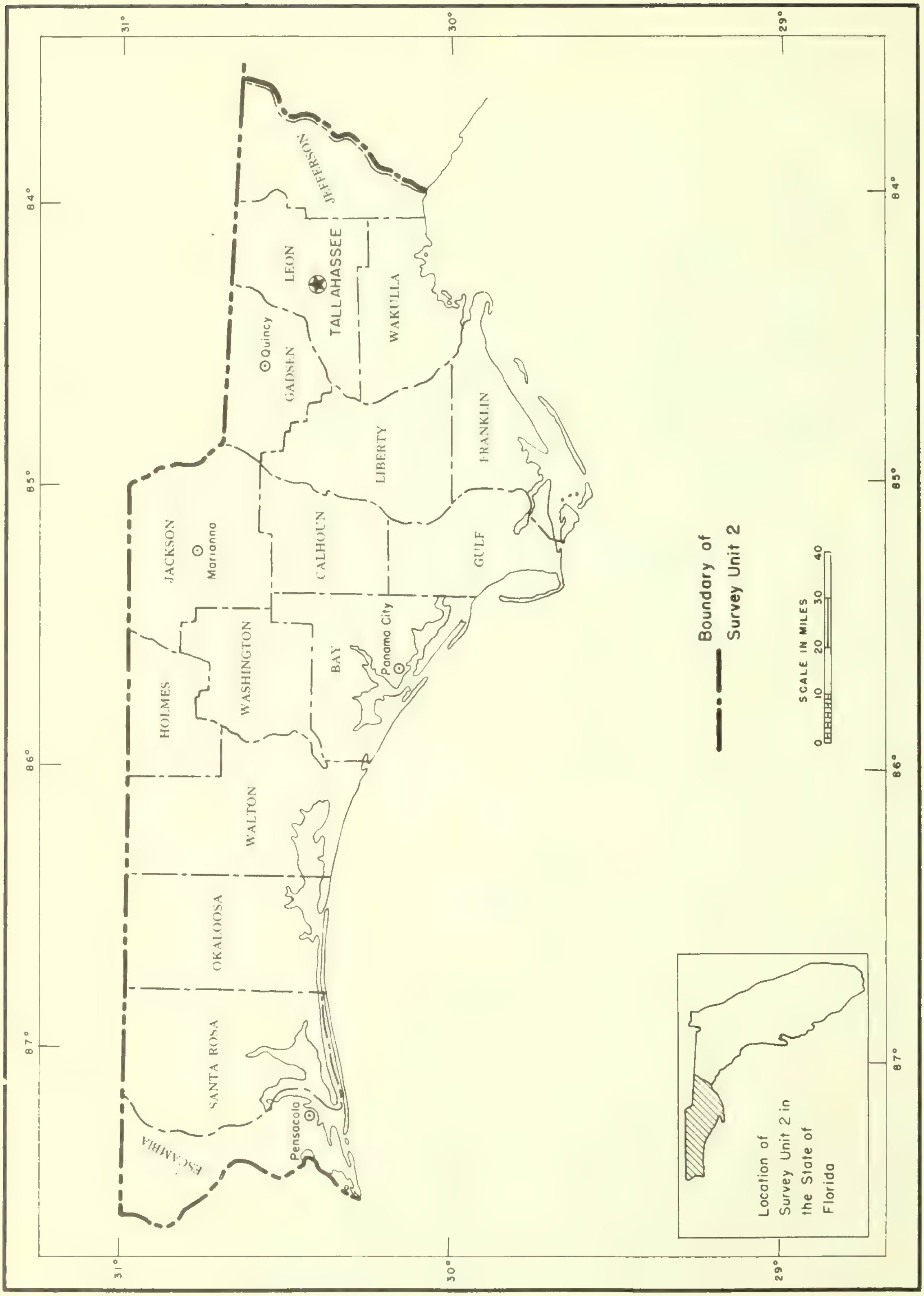


Figure 1.--Counties in Northwest Florida included in Survey Unit No. 2

FOREST RESOURCES OF NORTHWEST FLORIDA

The data presented in this publication were obtained from a resurvey of the forest resources of Florida during the period from June 1948 to August 1949. This report covers the group of 16 counties in Northwest Florida designated Survey Unit No. 2 (fig. 1). The field work was based on the combined use of aerial photography and ground plot examination to obtain current statistics on forest area and timber volumes. The original Forest Survey of this area was completed in 1934, and by comparing the current statistics with those of the original survey the changes which have taken place in the past 14 years can be determined.

1949 FACTS AND SIGNIFICANT CHANGES

Acreage of forest land: Nearly 6.1 million acres of land in Northwest Florida were classed as forest land in 1949. Of this total, 5.9 million acres were found to be in productive forests. No significant change in the area of forest land occurred between the original survey in 1934 and the resurvey of 1949. The Northwest Florida Survey Unit, with 83 percent of the total land area in forests, has the highest proportion of forest land found in the State.

Area in softwood forest types decreases: Northwest Florida exhibits the same trend in recent type changes that was found in the other areas of the State, but the changes are not as extensive. Since 1934, pine types on commercial forest land have decreased in area from 4.6 million acres to 4.2 million acres, a decline of 9 percent. The area occupied by hardwood types has increased from 1.2 million acres to 1.6 million acres, or 33 percent. Pine types are still predominant, since they occupy 71 percent of the commercial forest land area.

Saw-timber volume decreases: The total volume of saw timber in 1949 was 6.3 billion board feet. This total includes 525 million board feet in hardwood trees 12 inches d.b.h., which were not considered saw timber in the original survey. To place the data on a comparable basis, the present volume in these 12-inch hardwoods has been omitted.

Table A.--Change in volume of saw timber, 1934 to 1949

Species group	1934	1949	Change
	Thousand bd. ft.	Thousand bd. ft.	Percent
Pines	3,982,600	3,822,900	- 4
Hardwoods[1]	2,261,800	1,621,200	-28
Cypress[2]	623,500	369,100	-41
All species	6,867,900	5,813,200	-15

1/ Excludes volume of hardwoods 12 inches d.b.h.

2/ Includes volume of cedar.

Only 14 percent of forest area is in saw timber: Stands of saw timber containing 1,500 board feet or more per acre were found on only 14 percent of the commercial forest land. Of the remaining forest area, 19 percent is occupied by stands of pole timber, 17 percent by stands of seedlings and saplings, and 50 percent is either unstocked or lightly stocked with scattered trees (see definition of stand size classes, p. 30). No direct comparisons of forest area by stand class are possible between the original and current surveys because different standards were used.

Total sound-tree volume decreases slightly: The net cubic-foot volume of all sound trees 5.0 inches and larger decreased 2 percent during the period. However, the decrease was entirely in the hardwood and cypress species groups and was nearly balanced by an increase in the volume of pine.

The volume of sound wood in cull trees increased heavily in the hardwood species group. This same trend has been found in other areas of the State

Table B.--Change in volume of all trees 5.0 inches d.b.h. and larger, 1934 to 1949

Species group	Sound tree volume			Cull tree volume		
	1934	1949	Change	1934	1949	Change
	Million cu. ft.	Million cu. ft.	Percent	Million cu. ft.	Million cu. ft.	Percent
Pines[1]	1,200	1,321	+10	21	25	+ 19
Hardwoods[2]	936	854	- 9	335	769	+130
Cypress	196	110	-44	41	39	- 5
All species	2,332	2,285	- 2	397	833	+110

[1] Excluding turpentine butts.

[2] Excluding limb volume of sound hardwood trees.

Two-thirds of the forest land is understocked: In this Survey Unit 3.9 million acres are less than 40 percent stocked with sound trees. The understocked areas comprise two-thirds of all the commercial forest land in the Unit. Approximately 2 million acres are seriously understocked, having less than 10 percent of the required stocking of sound trees, and the other 1.9 million acres fall in the range of stocking from 10 to 39 percent.

Turpentining activity decreases: The area in turpentine crops and the number of trees being worked in Northwest Florida show a heavy decline since the original survey. In 1949 there were 104,900 acres in working timber crops compared to 940,000 acres in 1934. The number of turpentine pine trees being worked decreased from 12,081,000 to 2,742,000 during the period.

REASONS FOR AREA AND VOLUME CHANGES

Forest type area changes: The shift in forest area from softwood to hardwood types is a trend found throughout Florida, and is also present in other Southeastern states. Where stands of pine and cypress timber with a hardwood understory are cut over, the hardwoods usually occupy the site unless some measures are used to control them. In many areas, repeated burning, which destroys hardwood reproduction, has been reduced thus permitting greater hardwood competition. In most cases this trend to hardwoods is the result of a natural succession to hardwood types and will continue unless control measures are applied.

Saw-timber volume: The board-foot volumes shown in Table A have been made comparable by the exclusion of the present volume in 12-inch d.b.h. hardwood trees. The 12-inch hardwoods were not considered saw timber in the original survey.

The decrease in the board-foot volume of pine is slight and may not be significant. The data indicate that the higher growth rate of this species group has replaced nearly all of the volume cut or removed for various uses. The decreases in the volumes of hardwood and cypress are much greater and result from heavy cutting of these species in proportion to total volume, a slower rate of growth or replacement, and a larger number of cull hardwood trees.

Cubic volume: The data shown in Table B have also been made comparable. The net cubic-foot volume of all sound trees 5.0 inches d.b.h. and larger decreased 2 percent during the period. By species groups it was found that the cubic volume of pines increased 10 percent, indicating a reduction in trees of larger sizes (see Table A) and an increase in the number of trees of pole size. This change is the result of better stocking in pine stands and a more rapid growth rate.

In hardwoods, the decrease of 9 percent in cubic volume and 28 percent in saw-timber volume indicates a reduction of trees in the larger diameter classes which was partially offset by an increase in the number and volume of pole-size trees. This is not the case with cypress, where the decreases in both board-foot and cubic-foot volumes are about equal. The cypress stands are apparently being replaced by hardwoods as they are cut over, and the cypress is not restocking.

Cull volume: The changes in cull volumes of pine and cypress are relatively small and may not be significant. However, the volume of sound material in cull hardwood trees has more than doubled. During the original survey about one-fourth of the total hardwood volume was found to be in cull trees. In the resurvey, nearly half (47 percent) of the hardwood volume was in cull trees.

This increase in the volume of cull hardwoods is due to increases in the volume of both scrub oak and rotten cull trees. Excluding scrub oak, there was no significant change in the volume of other rough culls. More than one-fourth of the increase was accounted for by scrub oak, while rotten cull trees made up the remainder. Many hardwood trees which contained rot in some degree at the time of the original survey have since become too rotten to qualify as sound trees. This trend is augmented by cutting practices which seldom remove hardwoods with any marked degree of cull from the stand. The proportion of volume in cull trees in cut-over hardwood stands thus tends to become increasingly greater.

Table 1.--Gross area[1] by broad use class, 1949

Class of use	Area	
	Acres	Percent
Forest land:		
Commercial	5,928,000	77.4
Reserved	4,200	0.0
Non-productive	127,900	1.7
Total forest	6,060,100	79.1
Non-forest land:		
Agricultural - active	700,800	9.2
Agricultural - idle	234,300	3.1
Marsh	127,400	1.7
Dunes and beaches	25,700	0.3
Urban and other[2]	171,600	2.2
Total non-forest	1,259,800	16.5
Total land area	7,319,900	95.6
Total water area	340,300	4.4
All classes	7,660,200	100.0

[1] From U. S. Bureau of the Census, 1940.

[2] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

Table 2.--Ownership of land, 1949

Class of ownership	All land		Commercial forest land	
	Acres	Percent	Acres	Percent
Public land:				
National forest	553,500	7.5	542,700	9.1
Indian	--	--	--	--
Other federal	767,600	10.5	675,200	11.4
Total federal	1,321,100	18.0	1,217,900	20.5
State	51,600	0.7	23,300	0.4
County and municipal	18,800	0.3	4,000	0.1
Total public	1,391,500	19.0	1,245,200	21.0
Private land	5,928,400	81.0	4,682,800	79.0
All classes	7,319,900	100.0	5,928,000	100.0

Table 3.--Commercial forest area by forest type and stand size, 1949

Forest type 1/	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	--	3/ 159,000	532,100	220,100	1,474,000	2,385,200
Slash pine	42,000	162,500	206,900	493,200	424,300	1,328,900
Loblolly pine 2/	44,100	49,200	69,400	74,600	123,700	361,000
Pond pine	--	6,600	10,900	8,800	67,100	93,400
Sand pine	--	--	28,200	5,900	32,900	67,000
Cypress	14,100	22,900	26,300	22,500	32,000	117,800
All sftwd. types	100,200	400,200	873,800	825,100	2,154,000	4,353,300
Lowland hardwoods	133,900	197,300	198,900	184,200	135,800	850,100
Upland hardwoods	2,000	2,300	36,800	27,800	48,300	117,200
Scrub oak	--	--	--		606,600	606,600
All hdwd. types	135,900	199,600	235,700	212,000	790,700	1,573,900
Palm	--	--	--	--	800	800
All types	236,100	599,800	1,109,500	1,037,100	2,945,500	5,928,000
Percent	4.0	10.1	18.7	17.5	49.7	100.0

1/ See description of forest types and stand size classes in appendix.

2/ Includes 29,100 acres of shortleaf pine type.

3/ Includes a small acreage in large saw-timber stands.

Table 4.--Net volume[1] of saw timber by species and stand size, 1949

(in thousand board feet)

Species[2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	3,000	[3] 588,300	351,700	128,700	526,800	1,598,500
Slash pine	316,600	545,400	184,000	209,000	140,300	1,395,300
Loblolly pine	209,100	298,300	41,400	33,600	39,900	622,300
Pond pine	3,600	24,900	1,000	8,800	20,900	59,200
Other pines	106,200	2,700	22,700	16,000	--	147,600
Total	638,500	1,459,600	600,800	396,100	727,900	3,822,900
Cypress	102,000	131,400	43,100	18,100	18,800	313,400
Cedar	14,800	26,900	2,000	--	12,000	55,700
Total sftwds.	755,300	1,617,900	645,900	414,200	758,700	4,192,000
Hardwoods:						
Tupelo	289,600	290,800	87,200	26,900	6,500	701,000
Sweetgum	100,500	65,400	15,100	29,000	15,100	225,100
Soft maple	4,600	12,500	2,000	--	2,900	22,000
Other soft hdwds.	80,100	211,000	72,200	19,400	14,300	397,000
Total	474,800	579,700	176,500	75,300	38,800	1,345,100
Red oaks	73,700	126,800	67,400	34,100	64,600	366,600
White oaks	82,300	43,500	49,800	4,400	4,800	184,800
Hickory	21,700	10,100	23,300	19,600	7,000	81,700
Ash	25,500	39,500	4,400	--	700	70,100
Other hard hdwds.	55,900	34,500	4,700	1,000	1,500	97,600
Total	259,100	254,400	149,600	59,100	78,600	800,800
Total hdwds.	733,900	834,100	326,100	134,400	117,400	2,145,900
All species	1,489,200	2,452,000	972,000	548,600	876,100	6,337,900
Percent	23.5	38.7	15.3	8.7	13.8	100.0

[1] Log scale, International 1/4-inch rule.

[2] See appendix for species combined with others.

[3] Includes a little volume in large saw-timber stands.

Table 5.--Net volume[1] of saw timber by species and diameter class, 1949

Species	10-12 inches[2]	14-18 inches	20-24 inches	26 + inches	All diameters	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Softwoods:						
Longleaf pine	1,271,700	294,800	32,000	--	1,598,500	25.2
Slash pine	771,700	529,900	93,700	--	1,395,300	22.0
Loblolly pine	236,700	298,600	31,500	55,500	622,300	9.8
Pond pine	27,900	31,300	--	--	59,200	1.0
Other pines	22,800	50,500	74,300	--	147,600	2.3
Total	2,330,800	1,205,100	231,500	55,500	3,822,900	60.3
Cypress	127,600	155,800	30,000	--	313,400	4.9
Cedar	19,700	31,800	4,200	--	55,700	0.9
Total sftwds.	2,478,100	1,392,700	265,700	55,500	4,192,000	66.1
Hardwoods:						
Tupelo	166,200	379,200	151,200	4,400	701,000	11.1
Sweetgum	59,400	124,000	36,100	5,600	225,100	3.5
Soft maple	8,500	13,500	--	--	22,000	0.3
Other soft hdwds.	123,200	235,700	34,800	3,300	397,000	6.3
Total	357,300	752,400	222,100	13,300	1,345,100	21.2
Red oaks	81,400	213,600	54,900	16,700	366,600	5.8
White oaks	20,400	65,400	94,900	4,100	184,800	2.9
Hickory	29,000	44,400	8,300	--	81,700	1.3
Ash	23,300	38,900	7,900	--	70,100	1.1
Other hard hdwds.	13,300	38,400	45,900	--	97,600	1.6
Total	167,400	400,700	211,900	20,800	800,800	12.7
Total hdwds.	524,700	1,153,100	434,000	34,100	2,145,900	33.9
All species	3,002,800	2,545,800	699,700	89,600	6,337,900	100.0
Percent	47.4	40.2	11.0	1.4	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included.

Table 6.--Net volume[1] of saw timber by forest type and stand size, 1949

(in thousand board feet)

Forest type[2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	--	[4] 564,200	371,500	108,000	505,100	1,548,800
Slash pine	374,600	599,100	170,100	248,500	119,100	1,511,400
Loblolly pine[3]	223,200	270,100	80,600	30,100	13,300	617,300
Pond pine	--	24,900	3,700	1,900	22,900	53,400
Sand pine	--	--	18,500	--	--	18,500
Cypress	96,600	112,400	20,500	3,700	13,000	246,200
All sftwd. types	694,400	1,570,700	664,900	392,200	673,400	3,995,600
Lowland hardwoods	789,500	878,000	274,800	132,200	141,400	2,215,900
Upland hardwoods	5,300	3,300	32,300	24,200	35,800	100,900
Scrub oak	--	--	--	--	25,500	25,500
All hdwd. types	794,800	881,300	307,100	156,400	202,700	2,342,300
All types	1,489,200	2,452,000	972,000	548,600	876,100	6,337,900
Percent	23.5	38.7	15.3	8.7	13.8	100.0

1/ Log scale, International 1/4-inch rule.

2/ See description of forest types and stand-size classes in appendix.

3/ Includes 101,100 thousand board feet in shortleaf pine type.

4/ Includes a little volume in large saw-timber stands.

Table 7.--Net volume[1] of all trees by species and stand size, 1949

SOUND TREES (in thousand cords)

Species	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	9	[3]2,180	3,695	658	2,886	9,428
Slash pine	788	1,998	1,877	1,154	606	6,423
Loblolly pine	507	901	375	254	181	2,218
Pond pine	9	71	19	28	106	233
Other pines	238	16	138	95	2	489
Total	1,551	5,166	6,104	2,189	3,781	18,791
Cypress	239	431	333	104	99	1,206
Cedar	34	67	7	20	29	157
Total sftwds.	1,824	5,664	6,444	2,313	3,909	20,154
Hardwoods:						
Tupelo	878	1,569	999	210	85	3,741
Sweetgum	322	293	283	179	75	1,152
Soft maple	30	184	50	--	13	277
Other soft hdwds.	384	1,186	752	159	192	2,673
Total	1,614	3,232	2,084	548	365	7,843
Red oaks	233	574	544	209	269	1,829
White oaks	232	136	271	17	46	702
Hickory	76	31	145	126	23	401
Ash	145	207	89	3	12	456
Holly, dogwood	115	21	106	5	29	276
Other hard hdwds.	171	106	73	5	15	370
Total	972	1,075	1,228	365	394	4,034
Total hdwds.	2,586	4,307	3,312	913	759	11,877
All species	4,410	9,971	9,756	3,226	4,668	32,031
Percent	13.8	31.1	30.4	10.1	14.6	100.0
TREES OF OTHER QUALITY CLASSES (in thousand cords)						
Rough culls						
Softwoods	13	64	120	45	84	326
Hardwoods[2]	1,182	1,176	1,243	562	2,228	6,391
Rotten culls	1,142	1,457	1,417	569	1,092	5,677
Palms	6	19	11	4	148	188
All other classes	2,343	2,716	2,791	1,180	3,552	12,582

[1] Sound wood and bark.

[2] Includes scrub oak and noncommercial species.

[3] Includes a little volume in large saw-timber stands.

Table 8.--Net volume[1] of all trees by species and diameter class, 1949

SOUND TREES (in thousand cords)

Species	Pole trees		Saw-timber trees				All diameter
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20 + inches	
Softwoods:							
Longleaf pine	2,317	2,632	2,258	1,419	735	67	9,428
Slash pine	1,454	1,246	1,185	1,048	1,287	203	6,423
Loblolly pine	290	366	323	346	716	177	2,218
Pond pine	11	66	45	33	78	--	233
Other pines	75	74	50	20	116	154	489
Total	4,147	4,384	3,861	2,866	2,932	601	18,791
Cypress	167	306	188	144	341	60	1,206
Cedar	18	10	17	33	70	9	157
Total sftwds.	4,332	4,700	4,066	3,043	3,343	670	20,154
Hardwoods:							
Tupelo	570	597	673	495	1,014	392	3,741
Sweetgum	252	153	164	170	315	98	1,152
Soft maple	79	85	53	24	36	--	277
Other soft hdwds.	444	574	612	353	597	93	2,673
Total	1,345	1,409	1,502	1,042	1,962	583	7,843
Red oaks	233	325	306	241	548	176	1,829
White oaks	46	126	58	58	171	243	702
Hickory	82	63	41	82	113	20	401
Ash	82	95	87	68	105	19	456
Holly, dogwood	181	67	18	7	3	--	276
Other hard hdwds.	43	40	47	37	96	107	370
Total	667	716	557	493	1,036	565	4,034
Total hdwds.	2,012	2,125	2,059	1,535	2,998	1,148	11,877
All species	6,344	6,825	6,125	4,578	6,341	1,818	32,031
Percent	19.8	21.3	19.1	14.3	19.8	5.7	100.0
TREES OF OTHER QUALITY CLASSES (in thousand cords)							
Rough culls							
Softwoods	16	71	132	45	43	19	326
Hardwoods[2]	1,519	1,026	885	967	1,308	686	6,391
Rotten culls	351	529	503	452	1,721	2,121	5,677
Palms	--	5	61	108	14	--	188
All other classes	1,886	1,631	1,581	1,572	3,086	2,826	12,582

[1] Sound wood and bark.

[2] Includes scrub oak and noncommercial species.

Table 9.--Net volume[1/] of all trees by species and class of material, 1949

(in thousand cords)

Species	SOUND TREES				CULL TREES	
	Saw-timber trees		Pole timber trees	Total sound trees	Rough	Rotten
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	3,608	871	4,949	9,428	61	6
Slash pine	2,997	726	2,700	6,423	71	21
Loblolly pine	1,254	308	656	2,218	54	38
Pond pine	128	28	77	233	21	11
Other pines	269	71	149	489	61	--
Total	8,256	2,004	8,531	18,791	268	76
Cypress	572	161	473	1,206	55	349
Cedar	103	26	28	157	3	32
Total sftwds.	8,931	2,191	9,032	20,154	326	457
Hardwoods:						
Tupelo	1,530	371	1,840	3,741	1,109	2,176
Sweetgum	465	118	569	1,152	229	258
Soft maple	51	9	217	277	117	165
Other soft hdwds.	844	199	1,630	2,673	899	1,192
Total	2,890	697	4,256	7,843	2,354	3,791
Red oaks	782	183	864	1,829	656	779
White oaks	387	85	230	702	513	278
Hickory	175	40	186	401	74	64
Ash	161	31	264	456	322	196
Holly, dogwood	10	--	266	276	13	38
Scrub oak[2/]	--	--	--	--	2,240	--
Other hard hdwds.	192	48	130	370	219	74
Total	1,707	387	1,940	4,034	4,037	1,429
Total hdwds.	4,597	1,084	6,196	11,877	6,391	5,220
All species	13,528	3,275	15,228	32,031	6,717	5,677
Percent	42.2	10.2	47.6	100.0	54.2	45.8

[1/] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

[2/] Includes noncommercial species.

Table 10.--Net volume[1] of all trees by forest type and stand size, 1949

SOUND TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	--	[2]2,143	3,896	588	2,847	9,474
Slash pine	1,106	2,554	1,840	1,340	601	7,441
Loblolly pine	575	956	730	275	139	2,675
Pond pine	--	70	38	11	131	250
Sand pine	-	-	134	4	--	138
Cypress	270	355	264	32	58	979
All sftwd. types	1,951	6,078	6,902	2,250	3,776	20,957
Lowland hdwds.	2,445	3,874	2,540	816	644	10,319
Upland hdwds.	14	19	314	160	110	617
Scrub oak	--	--	--	--	138	138
All hdwd. types	2,459	3,893	2,854	976	892	11,074
All types	4,410	9,971	9,756	3,226	4,668	32,031
Percent	13.8	31.1	30.4	10.1	14.6	100.0

ROUGH AND ROTTEN CULLS (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	-	48	171	68	528	815
Slash pine	172	283	97	179	139	870
Loblolly pine	77	157	250	163	187	834
Pond pine	--	-	--	4	6	10
Sand pine	--	--	49	12	19	80
Cypress	16.	171	55	4	32	426
All sftwd. types	413	659	622	430	911	3,035
Lowland hdwds.	1,917	2,036	2,083	682	1,673	8,391
Upland hdwds.	7	2	75	64	105	253
Scrub oak	-	--	--	--	715	715
All hdwd. types	1,924	2,038	2,158	746	2,493	9,359
All types	2,337	2,697	2,780	1,176	3,404	12,394
Percent	18.8	21.8	22.4	9.5	27.5	100.0

[1] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

[2] Includes a little volume in large saw-timber stands.

Table 11.--Net volume[1] of pole timber trees by forest type and stand size, 1949

SOUND TREES (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	—	608	2,843	291	1,395	5,137
Slash pine	203	927	1,358	656	277	3,421
Loblolly pine	62	248	511	194	103	1,118
Pond pine	--	3	28	6	68	105
Sand pine	--	--	80	4	--	84
Cypress	45	79	211	22	23	380
All **sftwd.** types	310	1,865	5,031	1,173	1,866	10,245
Lowland hdwds.	484	1,538	1,806	463	279	4,570
Upland hdwds.	2	10	222	95	21	350
Scrub oak	--	--	--	--	63	63
All hdwd. types	486	1,548	2,028	558	363	4,983
All types	796	3,413	7,059	1,731	2,229	15,228
Percent	5.2	22.4	46.4	11.4	14.6	100.0

ROUGH AND ROTTEN CULLS (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	--	15	93	66	443	617
Slash pine	92	154	62	79	53	440
Loblolly pine	16	51	90	49	75	281
Pond pine	--	--	--	1	2	3
Sand pine	--	--	14	12	6	32
Cypress	59	48	44	3	13	167
All sftwd. types	167	268	303	210	592	1,540
Lowland hdwds.	436	449	692	291	785	2,653
Upland hdwds.	4	2	30	27	5	68
Scrub oak	--	--	--	--	568	568
All hdwd. types	440	451	722	318	1,358	3,289
All types	607	719	1,025	528	1,950	4,829
Percent	12.6	14.9	21.2	10.9	40.4	100.0

[1] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

Table 12.--Net volume[1] of all trees by species and diameter class, 1949

SOUND TREES (in thousand cubic feet)

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20 + inches	
Softwoods:							
Longleaf pine	135,938	177,558	163,702	107,075	58,034	5,794	648,10
Slash pine	85,347	83,518	85,316	79,641	103,213	17,035	454,07
Loblolly pine	16,984	24,891	23,263	26,343	57,505	15,531	164,51
Pond pine	658	4,557	3,311	2,572	6,149	--	17,24
Other pines	4,434	4,856	3,590	1,414	9,421	13,268	36,98
Total	243,361	295,380	279,182	217,045	234,322	51,628	1,320,91
Cypress	10,988	23,097	15,098	12,018	30,327	5,567	97,09
Cedar	1,175	720	1,352	2,774	6,210	816	13,04
Total sftwds.	255,524	319,197	295,632	231,837	270,859	58,011	1,431,06
Hardwoods:							
Tupelo	34,436	39,109	46,836	37,363	80,230	31,511	269,48
Sweetgum	15,316	10,609	11,533	12,946	24,899	7,960	83,26
Soft maple	4,693	5,699	3,749	1,882	2,812	---	18,83
Other soft hdwds.	26,795	38,323	42,561	26,802	47,836	7,617	189,93
Total	81,240	93,740	104,679	78,993	155,777	47,088	561,51
Red oaks	14,097	21,549	20,739	18,040	43,887	14,515	132,82
White oaks	2,773	8,371	3,729	4,553	13,649	19,824	52,89
Hickory	5,028	4,138	2,807	6,188	9,124	1,618	28,90
Ash	4,934	6,179	6,044	5,338	8,334	1,509	32,33
Holly, dogwood	10,893	4,635	1,300	529	218	---	17,57
Other hard hdwds.	2,653	2,577	3,273	2,902	7,639	8,746	27,79
Total	40,378	47,449	37,892	37,550	82,851	46,212	292,33
Total hdwds.	121,618	141,189	142,571	116,543	238,628	93,300	853,84
All species	377,142	460,386	438,203	348,380	509,487	151,311	2,284,90
Percent	16.5	20.2	19.2	15.2	22.3	6.6	100.0

TREES OF OTHER QUALITY CLASSES (in thousand cubic feet)

Rough culls							
Softwoods	947	4,862	9,778	3,460	3,537	1,591	24,17
Hardwoods[2]	92,041	67,180	61,591	70,263	102,397	55,196	448,66
Rotten culls	21,432	34,214	35,971	34,825	137,702	177,377	441,52
Palms	—	514	6,571	10,953	1,534	--	19,57
All other classes	114,420	106,770	113,911	119,501	245,170	234,164	933,93

[1] Excluding bark.

[2] Includes scrub oak and noncommercial species.

Table 13.--Net volume[1] of all trees by species and class of material, 1949

(in thousand cubic feet)

Species	SOUND TREES				CULL TREES	
	Saw-timber trees		Pole timber trees	Total sound trees	Rough	Rotten
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	273,926	60,679	313,496	648,101	4,622	356
Slash pine	232,225	52,980	168,865	454,070	4,994	1,536
Loblolly pine	99,219	23,423	41,875	164,517	3,951	2,741
Pond pine	9,771	2,261	5,215	17,247	1,467	803
Other pines	22,117	5,576	9,290	36,983	4,514	--
Total	637,258	144,919	538,741	1,320,918	19,548	5,436
Cypress	51,109	11,901	34,085	97,095	4,381	31,393
Cedar	9,042	2,110	1,895	13,047	246	2,802
Total sftwds.	697,409	158,930	574,721	1,431,060	24,175	39,631
Hardwoods:						
Tupelo	122,363	26,741	120,381	269,485	79,959	169,760
Sweetgum	37,326	8,479	37,458	83,263	16,197	19,814
Soft maple	3,866	828	14,141	18,835	8,503	11,549
Other soft hdwds.	67,204	15,051	107,679	189,934	64,018	91,572
Total	230,759	51,099	279,659	561,517	168,677	292,695
Red oaks	62,393	14,049	56,385	132,827	49,189	60,594
White oaks	30,979	7,047	14,873	52,899	38,576	21,577
Hickory	13,832	3,098	11,973	28,903	5,465	5,022
Ash	12,484	2,697	17,157	32,338	22,481	14,286
Holly, dogwood	747	--	16,828	17,575	843	2,381
Scrub oak[2]	--	--	--	--	147,100	
Other hard hdwds.	15,575	3,712	8,503	27,790	16,337	5,335
Total	136,010	30,603	125,719	292,332	279,991	109,195
Total hdwds.	366,769	81,702	405,378	853,849	448,668	401,890
All species	1,064,178	240,632	980,099	2,284,909	472,843	441,521
Percent	46.6	10.5	42.9	100.0	51.7	48.3

1/ Excluding bark and volume of palms shown in table 12.

2/ Includes noncommercial species.

Table 14.--Average volume[1] per acre of saw timber by forest type, species group, and stand size, 1949

(in board feet)

Forest type and species group	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine						
Softwood	--	[2] 3,528	678	487	338	640
Hardwood	--	21	20	4	5	9
Slash pine						
Softwood	8,213	3,536	784	499	281	1,089
Hardwood	710	151	38	4	--	48
Loblolly pine						
Softwood	4,725	4,685	715	165	74	1,413
Hardwood	329	809	447	238	34	297
Pond pine						
Softwood	--	3,763	342	217	342	572
Hardwood	--			--	--	--
Sand pine						
Softwood	--		345	--	--	145
Hardwood	--	--	311	--	--	131
Cypress						
Softwood	4,901	4,158	780	163	408	1,712
Hardwood	1,950	744	--	--	--	378
Lowland hardwoods						
Softwood	991	663	195	233	524	490
Hardwood	4,906	3,787	1,186	485	517	2,117
Upland hardwoods						
Softwood	--	440	18	--	--	14
Hardwood	2,617	988	856	872	741	846
Scrub oak						
Softwood	--	--	--	--	42	42
Hardwood	--	--	--	--	--	--
All types						
Softwood	3,198	2,698	582	399	258	707
Hardwood	3,096	1,393	294	130	40	362

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[1] Log scale, International 1/4-inch rule.

[2] Includes a little volume in large saw-timber stands.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand size, 1949

(in standard cords)

Forest type and species group	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[2]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	--	--	[3]13.4	0.2	7.1	0.1	2.0	(4/)	3.9	(4/)
Hardwood	--	--	0.1	0.2	0.3	0.3	0.1	0.3	0.1	0.3
Slash pine										
Softwood	20.6	0.4	13.0	0.2	8.5	0.1	2.0	0.1	5.0	0.2
Hardwood	5.8	3.7	2.7	1.5	0.4	0.3	0.1	0.2	0.6	0.5
Loblolly pine										
Softwood	11.3	--	14.8	0.7	6.1	0.5	1.3	0.1	5.3	0.2
Hardwood	1.7	1.7	4.7	2.5	4.5	3.1	0.8	1.7	2.1	2.1
Pond pine										
Softwood	--	--	10.6	--	3.5	--	1.9	0.1	2.7	0.1
Hardwood	--	--	--	--	--	--	--	(4/)	--	(4/)
Sand pine										
Softwood	--	--	--	--	2.3	1.4	0.1	0.3	1.0	0.8
Hardwood	--	--	--	--	2.4	0.4	--	0.5	1.0	0.4
Cypress										
Softwood	11.6	1.6	11.2	0.9	7.9	1.0	1.7	0.7	6.1	0.9
Hardwood	7.6	10.0	4.3	6.6	2.2	1.1	--	--	2.2	2.7
Lowland hardwoods										
Softwood	2.2	0.7	1.8	0.3	0.9	0.2	1.3	0.2	1.5	0.3
Hardwood	16.0	13.6	17.8	10.0	11.9	10.3	3.2	7.2	10.6	9.6
Upland hardwoods										
Softwood	--	--	1.3	--	0.3	--	--	--	0.1	--
Hardwood	6.9	3.5	7.0	0.9	8.2	2.0	3.5	2.2	5.1	2.1
Scrub oak										
Softwood	--	--	--	--	--	--	0.2	--	0.2	--
Hardwood	--	--	--	--	--	--	(4/)	1.2	(4/)	1.2
All types										
Softwood	7.7	0.5	9.4	0.3	5.8	0.2	1.6	0.1	3.4	0.1
Hardwood	10.9	9.3	7.2	4.2	3.0	2.3	0.4	1.1	2.0	2.0

1/ Sound wood and bark, excluding volume of palms.

2/ Sound trees; cull trees.

3/ Includes a little volume in large saw-timber stands.

4/ Less than 0.05 cords per acre.

Table 16.--Average volume[1/] per acre of pole timber trees by forest type, species group, and stand size, 1949

(in standard cords)

Forest type and species group	Large saw-timber stands		Small saw-timber stands		Pole timber stands		Other stand sizes		All stands	
	Sound[2/]	Cull[2/]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	--	--	3.8	(3/)	5.1	(3/)	0.9	(3/)	2.1	(3/)
Hardwood	--	--	(3/)	0.1	0.2	0.2	(3/)	0.3	0.1	0.3
Slash pine										
Softwood	1.0	--	3.4	(3/)	6.3	0.1	0.9	(3/)	2.1	(3/)
Hardwood	3.8	2.2	2.3	0.9	0.3	0.2	0.1	0.1	0.5	0.3
Loblolly pine										
Softwood	0.6	--	2.4	(3/)	4.0	0.2	1.0	(3/)	1.7	0.1
Hardwood	0.8	0.4	2.6	1.0	3.4	1.1	0.5	0.6	1.4	0.7
Pond pine										
Softwood	--	--	0.5	--	2.6	--	1.0	(3/)	1.1	(3/)
Hardwood	--	--	--	--	--	--	--	(3/)	--	(3/)
Sand pine										
Softwood	--	--	--	--	1.2	0.3	0.1	--	0.6	0.1
Hardwood	--	--	--	--	1.6	0.2	--	0.5	0.7	0.4
Cypress										
Softwood	0.6	--	1.4	0.3	5.9	0.6	0.8	0.3	2.0	0.3
Hardwood	2.6	4.2	2.1	1.8	2.2	1.1	--	--	1.2	1.1
Lowland hardwoods										
Softwood	0.1	(3/)	0.2	(3/)	0.4	(3/)	0.4	(3/)	0.3	(3/)
Hardwood	3.5	3.2	7.6	2.3	8.7	3.5	1.9	3.3	5.0	3.1
Upland hardwoods										
Softwood	--	--	--	--	0.2	--	--	--	0.1	--
Hardwood	1.0	2.0	4.3	0.9	5.8	0.8	1.5	0.4	2.9	0.6
Scrub oak										
Softwood	--	--	--	--	--	--	0.1	--	0.1	--
Hardwood	--	--	--	--	--	--	(3/)	0.9	(3/)	0.9
All types										
Softwood	0.4	(3/)	2.3	(3/)	4.2	0.1	0.7	(3/)	1.5	(3/)
Hardwood	3.0	2.6	3.4	1.2	2.2	0.9	0.3	0.6	1.0	0.8

[1/] Sound wood and bark, excluding volume of palms.

[2/] Sound trees; cull trees.

[3/] Less than 0.05 cords per acre.

Table 17.--Number[1] of turpentine pine trees by working status and tree size, 1949

(in thousands of trees)

Working status	Pole size trees	Small saw-timber trees	Large saw-timber trees	All trees
Round timber[2]	112,874	28,783	1,152	142,809
Working timber[3]	323	2,403	16	2,742
Resting timber	162	4,451	233	4,846
Abandoned timber	560	1,923	256	2,739
Worked-out timber	139	1,747		1,886
All classes	114,058	39,307	1,657	155,022

[1] Includes sound and rough cull trees.

[2] In 1934 there were 11,945,000 round trees 9.0 inches d.b.h. and larger compared to 29,935,000 in 1949.

[3] In 1934 there were 12,081,000 working trees compared to 2,742,000 in 1949.

Table 18.--Area of turpentine timber crops by working status, 1949

Crop working status	Area	
	Acres	Percent
Round timber	410,200	45.0
Working timber:		
Front-faced	59,700	6.5
Back-faced	45,200	5.0
Resting timber	186,000	20.4
Abandoned timber	108,900	11.9
Worked-out timber	102,500	11.2
All classes	912,500	100.0

Table 19.--Area of stump land and tonnage of wood naval stores stumps by availability class, 1949

Availability class	Area	Tonnage[1]
	Acres	Thousand tons
Merchantable area	2,249,800	[4] 5,016
Marginal area[2]	91,900	79
Potential area[3]	317,600	836
Inaccessible area	38,300	38
All classes	2,697,600	5,969

[1] Includes stumps on agricultural land.

[2] Stump-land areas less than 25 acres in extent and partially worked areas.

[3] Unworkable at present due to density of timber stands.

[4] A check on the tons of stumps harvested under existing practices indicates the recoverable tonnage is approximately two-thirds of the merchantable volume shown.

Table 20.--Number of trees[1] by species group, quality class, and tree size, 1949

(in thousands of trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small saw-timber trees	Large saw-timber trees	All trees
Yellow pines:					
Sound trees	487,577	126,398	45,006	2,923	661,904
Rough culls	12,918	812	1,007	61	14,798
Rotten culls	13,791	434	523	31	14,779
Total	514,286	127,644	46,536	3,015	691,481
Other softwoods:					
Sound trees	20,660	7,618	3,195	630	32,103
Rough culls	2,335	237	198	--	2,770
Rotten culls	2,089	1,613	1,031	451	5,184
Total	25,084	9,468	4,424	1,081	40,057
Soft-textured hdwds.:					
Sound trees	216,154	52,159	11,514	1,925	281,752
Rough culls	62,188	11,875	2,200	268	76,531
Rotten culls	26,185	18,656	6,831	3,191	54,863
Total	304,527	82,690	20,545	5,384	413,146
Hard-textured hdwds.:					
Sound	165,143	26,498	6,281	1,785	199,707
Rough culls[2]	523,574	50,165	3,450	519	577,708
Rotten culls	18,862	8,481	2,055	1,173	30,571
Total	707,579	85,144	11,786	3,477	807,986
Palms	(3/)	72	1,132	---	1,204
All species	1,551,476	305,018	84,423	12,957	1,953,874

1/ All trees 1.0 inch d.b.h. and larger.

2/ Includes scrub oak and noncommercial trees.

3/ Data not recorded.

Table 21.--Area of poorly stocked stands and unstocked areas by plantability classes, 1949

Forest type[1]	No planting required[2]	Suitable for machine planting	Hand planting required	All classes
	Acres	Acres	Acres	Acres
Longleaf pine	860,900	559,400	53,700	1,474,000
Slash pine	146,900	186,500	90,900	424,300
Loblolly pine	76,400	33,900	13,400	123,700
Pond pine	45,800	--	21,300	67,100
Sand pine	3,000	29,900	-	32,900
Upland hardwoods	40,900	7,400	--	48,300
Scrub oak	50,000	432,700	123,900	606,600
All types	1,223,900	1,249,800	303,200	2,776,900
Percent	44.1	45.0	10.9	100.0

[1] Lowland types not classified.

[2] Sufficient seed trees present or area is restocking naturally.

Table 22.--Commercial forest area by forest type and degree of stocking, 1949

STOCKING IN SOUND TREES

Forest type	Degree of stocking 1/ 0-9 percent	10-39 percent	40-69 percent	70-99 percent	100 + percent	Total area
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	981,500	904,100	251,900	140,700	107,000	2,385,200
Slash pine	322,100	446,600	192,800	140,600	226,800	1,328,900
Loblolly pine	76,700	122,300	67,900	25,100	69,000	361,000
Pond pine	34,600	58,800	--	--	--	93,400
Sand pine	23,200	32,900	10,900	--	--	67,000
Cypress	11,200	43,200	37,500	15,400	10,500	117,800
Lowland hdwds.	42,900	174,900	279,800	157,500	195,000	850,100
Upland hdwds.	7,400	46,000	5,000	34,500	24,300	117,200
Scrub oak	553,700	29,700	23,200	--	--	606,600
Palm	800	--	--	--	--	800
All types	2,054,100	1,858,500	869,000	513,800	632,600	5,928,000
Percent	34.6	31.3	14.7	8.7	10.7	100.0

STOCKING IN TREES OF ALL QUALITY CLASSES 2/

Forest type	0-9 percent	10-39 percent	40-69 percent	70-99 percent	100 + percent	Total area
Longleaf pine	751,400	813,400	371,200	228,500	220,700	2,385,200
Slash pine	290,200	469,600	149,600	144,200	275,300	1,328,900
Loblolly pine	25,600	126,900	66,600	57,100	84,800	361,000
Pond pine	34,600	58,800	--	--	--	93,400
Sand pine	23,200	9,700	28,200	5,900		67,000
Cypress	11,200	39,900	15,200	14,700	36,800	117,800
Lowland hdwds.	8,100	29,400	125,700	210,300	476,600	850,100
Upland hdwds.	7,400	40,900	7,300	13,400	48,200	117,200
Scrub oak	43,900	227,200	158,700	79,900	96,900	606,600
Palm	--	--	--	--	800	800
All types	1,195,600	1,815,800	922,500	754,000	1,240,100	5,928,000
Percent	20.2	30.6	15.6	12.7	20.9	100.0

1/ Including trees 1.0 inches d.b.h. and larger.

2/ Includes sound trees, cull trees, and palms.

Table 23.--County area by broad use class, 1949

County	Total area[1]	Non-forest area		Forest land		
		Land	Water	Non-commercial[2]	Commercial	
	Acres	Acres	Acres	Acres	Acres	Percent
Bay	551,000	50,600	60,700	11,200	428,500	87.4
Calhoun	362,900	32,700	1,700	--	328,500	90.9
Escambia	491,500	101,000	41,600	2,900	346,000	76.9
Franklin	361,600	29,800	16,500	21,800	293,500	85.0
Gadsden	334,700	100,800	6,000	3,200	224,700	68.4
Gulf	369,900	31,600	7,500	7,500	323,300	89.2
Holmes	309,800	83,900	2,000	--	223,900	72.7
Jackson	606,700	261,800	8,300	900	335,700	56.1
Jefferson	389,800	96,500	4,300	--	289,000	75.0
Leon	445,500	94,700	16,300	100	334,400	77.9
Liberty	540,800	6,500	3,100	16,800	514,400	95.7
Okaloosa	634,900	77,800	40,500	6,600	510,000	85.8
Santa Rosa	737,300	95,400	72,600	6,400	562,900	84.7
Wakulla	406,400	42,400	14,900	50,200	298,900	76.3
Walton	726,400	82,800	31,900	4,500	607,200	87.4
Washington	391,000	71,500	12,400	--	307,100	81.1
Unit total	7,660,200	1,259,800	340,300	132,100	5,928,000	81.0

[1] Gross area from Bureau of the Census, 1940.

[2] Non-productive forest land plus forest land withdrawn from commercial use.

Table 24.--Ownership of commercial forest land by county, 1949

County	Private		Public					
			National forest	Other federal	State	County, city, town	Total public	
	Acres	Percent	Acres	Acres	Acres	Acres	Acres	Percent
Bay	398,800	93.1	--	21,300	8,000	400	29,700	6.9
Calhoun	328,200	99.9	--	100	100	100	300	0.1
Escambia	345,000	99.7	--	600	--	400	1,000	0.3
Franklin	271,900	92.6	21,400	--	200	--	21,600	7.4
Gadsden	223,200	99.3	--	100	1,300	100	1,500	0.7
Gulf	321,100	99.3	--	2,200	(1/)	--	2,200	0.7
Holmes	222,700	99.5	--	300	600	300	1,200	0.5
Jackson	331,800	98.8	--	400	3,300	200	3,900	1.2
Jefferson	282,900	97.9	--	4,400	1,500	200	6,100	2.1
Leon	232,700	69.6	100,600	500	100	500	101,700	30.4
Liberty	249,600	48.5	263,000	300	800	700	264,800	51.5
Okaloosa	242,800	47.6	--	264,000	3,200	(1/)	267,200	52.4
Santa Rosa	389,300	69.2	--	171,800	700	1,100	173,600	30.8
Wakulla	97,900	32.8	157,700	43,200	100	--	201,000	67.2
Walton	440,900	72.6	--	165,700	600	--	166,300	27.4
Washington	304,000	99.0	--	300	2,800	--	3,100	1.0
Unit total	4,682,800	79.0	542,700	675,200	23,300	4,000	1,245,200	21.0

1/ Less than 50 acres.

Table 25.--Net volume[1] of saw timber by county and species group, 1949

(in thousand board feet)

County	Softwoods[2]	Tupelo, sweet-gum, and soft maple[3]	Other hardwoods	All species
Bay	157,100	18,300	13,700	189,100
Calhoun	100,600	67,100	107,300	275,000
Escambia	262,400	34,100	9,900	306,400
Franklin	153,200	137,600	4,900	295,700
Gadsden	162,100	61,500	33,000	256,600
Gulf	220,800	71,100	26,300	318,200
Holmes	111,500	83,600	84,800	279,900
Jackson	197,700	124,500	122,700	444,900
Jefferson	309,200	231,800	79,900	620,900
Leon	426,500	83,500	36,300	546,300
Liberty	508,500	177,100	113,900	799,500
Okaloosa	384,200	31,200	10,200	425,600
Santa Rosa	552,200	54,300	34,100	640,600
Wakulla	321,400	23,300	30,000	374,700
Walton	205,600	94,400	47,600	347,600
Washington	119,000	51,700	46,200	216,900
Unit total	4,192,000	1,345,100	800,800	6,337,900

[1] Log scale, International 1/4-inch rule.

[2] Includes pine, cypress, and cedar.

[3] Includes other soft-textured hardwoods.

Table 26.--Net volume[1] of saw timber by county, broad species group, and diameter class group, 1949

County	Softwoods		Hardwoods		Soft-woods	Hard-woods
	9-14 inches	15 + inches	11-16 inches	17 + inches		
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent	Percent
Bay	110,300	46,800	29,900	2,100	83.1	16.9
Calhoun	92,200	8,400	115,800	58,600	36.6	63.4
Escambia	255,500	6,900	27,100	16,900	85.6	14.4
Franklin	124,600	28,600	123,600	18,900	51.8	48.2
Gadsden	112,100	50,000	77,600	16,900	63.2	36.8
Gulf	169,700	51,100	56,200	41,200	69.4	30.6
Holmes	87,500	24,000	109,400	59,000	39.8	60.2
Jackson	144,000	53,700	156,700	90,500	44.4	55.6
Jefferson	242,700	66,500	216,800	94,900	49.8	50.2
Leon	319,700	106,800	46,600	73,200	78.1	21.9
Liberty	314,400	194,100	158,000	133,000	63.6	36.4
Okaloosa	283,900	100,300	19,500	21,900	90.3	9.7
Santa Rosa	434,000	118,200	46,200	42,200	86.2	13.8
Wakulla	293,600	27,800	46,000	7,300	85.8	14.2
Walton	142,300	63,300	108,600	33,400	59.1	40.9
Washington	113,000	6,000	62,400	35,500	54.9	45.1
Unit total	3,239,500	952,500	1,400,400	745,500	66.1	33.9

[1] Log scale, International 1/4-inch rule.

Table 27.--Net volume[1] of all trees by county, pulping-species groups, and tree diameter groups, 1949

SOUND TREES (in thousand cords)

County	Yellow pines		Tupelo, sweetgum and soft maple[2]		Other species		All species
	5-12 inches	13 + inches	5-12 inches	13 + inches	5-12 inches	13 + inches	
Bay	1,077	122	186	30	161	40	1,616
Calhoun	399	20	241	118	259	244	1,281
Escambia	1,626	79	204	62	64	14	2,049
Franklin	594	143	248	285	111	16	1,397
Gadsden	498	207	350	103	146	61	1,365
Gulf	845	31	119	169	221	183	1,568
Holmes	521	87	357	174	200	181	1,520
Jackson	740	177	710	202	431	245	2,505
Jefferson	783	229	657	458	384	192	2,703
Leon	1,159	483	260	182	138	82	2,304
Liberty	1,319	443	463	377	413	380	3,395
Okaloosa	704	628	161	67	47	23	1,630
Santa Rosa	2,215	395	181	105	153	127	3,176
Wakulla	1,267	231	141	22	161	55	1,877
Walton	1,022	204	724	121	170	143	2,384
Washington	489	54	296	70	257	95	1,261
Unit total	15,258	3,533	5,298	2,545	3,316	2,081	32,031

ROTTEN AND ROUGH CULLS (in thousand cords)

County	Yellow pines 5-12 inches	Yellow pines 13 + inches	Tupelo, sweetgum and soft maple 5-12 inches	Tupelo, sweetgum and soft maple 13 + inches	Other species 5-12 inches	Other species 13 + inches	All species
Bay	18	3	33	34	70	8	166
Calhoun	11	--	49	84	323	242	709
Escambia	2	6	113	86	285	10	502
Franklin	12	26	66	306	70	8	488
Gadsden	9	--	316	205	177	200	907
Gulf	16	-	214	487	148	120	985
Holmes	3	-	99	95	66	118	381
Jackson	19	2	265	258	304	354	1,202
Jefferson	28	9	232	337	156	255	1,017
Leon	8	6	94	95	154	170	527
Liberty	11	--	196	399	344	265	1,215
Okaloosa	68	-	157	311	199	45	780
Santa Rosa	4	4	168	163	522	87	948
Wakulla	34	--	61	70	239	188	592
Walton	37	8	412	314	316	160	1,247
Washington	--	--	172	254	196	106	728
Unit total	280	64	2,647	3,498	3,569	2,336	12,394

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[1] Sound wood and bark, excluding volume of palms. Limbs of sawlog-size hardwoods are included in cull volumes.

[2] Includes bay, magnolia, and yellow-poplar.

DEFINITION OF TERMS

Land-Use Classes

Forest. Land bearing forest growth, land from which the forest has been removed and which shows no evidence of any other recent land use, or former agricultural land which now has a five-percent stocking of trees. Subdivided into the following classes:

Commercial: Land bearing, or capable of bearing, timber of commercial character and available now or prospectively for commercial use.

Reserved: Forest land in public ownership upon which commercial timber cutting is prohibited.

Non-productive: Forest land of such low productivity or so inaccessible that commercial timber will not be produced.

Non-forest. Land less than five percent stocked with trees and showing evidence of non-forest use.

Agriculture: Under cultivation or in pasture, including farm yards on active farms.

Idle: Land previously cultivated or pastured but now idle or abandoned. If reverting to forest there must be less than five percent stocking of trees.

Marsh: Low, boggy, non-forested land usually supporting a heavy growth of grass.

Dunes and beaches: Non-forested sand dunes or coastal beaches.

Urban and other: Includes towns, suburban areas being developed for residential or other urban purposes, school yards, cemeteries, industrial sites, roads, railroads, power lines, and other rights-of-way. Scattered areas of timber within exterior boundaries of cities or villages are also included.

Water: Includes both the small ponds and lakes less than 40 acres in size and streams, sloughs, and canals less than ten chains in width classed as "land area" by the Bureau of the Census. Also includes the "inland water" listed by the Census. On coastal areas the water-line is the mean high-tide mark; tidal flats are classed as water.

Forest Types

Longleaf pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with longleaf pine predominating.

Slash pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with slash pine predominating.

Loblolly pine. Stands in which coniferous species comprise at least 25 percent of the dominant trees, with loblolly pine predominating. Stands of shortleaf and spruce pine are also included in this type.

Pond pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees with pond pine predominating.

Sand pine. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees with sand pine predominating.

Cypress. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with cypress predominating. White cedar is also included with this type.

Lowland hardwoods. Stands in which mixed hardwoods such as tupelo gum, black-gum, sweetgum, white oak, water oak, red maple, and ash comprise at least 75 percent of the dominant and codominant trees. Found along rivers, small streams, and in swamps and bays.

Upland hardwoods. Stands in which mixed hardwoods such as red oak, white oak, post oak, hickory, ash, sweetgum, elm, and yellow-poplar comprise at least 75 percent of the dominant and codominant trees. Found on the drier upland sites and on low rolling hills bordering the flatwood zone.

Scrub oak. Stands in which scrub species such as blackjack, bluejack, turkey and laurel oaks predominate and in which sound commercial species comprise less than five percent of satisfactory stocking.

Palms. Stands in which there is at least a five-percent stocking of merchantable palm trees and less than five-percent stocking of other sound commercial species.

Stand-Size Classes

Saw timber. Stands containing at least 1,500 board feet net, International 1/4-inch log rule, per acre in sound, live, softwood trees 9.0 inches d.b.h. or larger or hardwood trees 11.0 inches d.b.h. or larger. Two classes of saw-timber stands are recognized:

Large saw timber: Stands of saw timber having more than 50 percent of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Small saw timber: Stands of saw timber having 50 percent or less of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Pole timber. Stands at least 10 percent stocked with pole-size or larger timber, with at least one-half the minimum stocking in pole sizes, and which have less than 1,500 board feet net per acre of saw timber.

Seedling and sapling. Stands less than 10 percent stocked by pole-size or larger trees and with less than 1,500 board feet net per acre, but at least 40 percent stocked with commercial species. Eight hundred seedlings or saplings per acre are considered full stocking.

Poorly stocked and unstocked. Stands of pole-size or larger trees that are less than 10 percent stocked, seedling or sapling stands less than 40 percent stocked, or nonstocked forest land.

Diameters

D.b.h. (diameter at breast height). Stem diameter in inches, outside bark, measured at 4½ feet above the ground.

Diameter class. All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint; e.g., trees 7.0 to and including 8.9 inches are in the 8-inch class.

Tree Classification

Sound saw-timber trees. Softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound saw timber.

Sound pole timber trees. Straight-boled trees between 5.0 inches d.b.h. and saw-timber size.

Sound sapling-size trees. Trees 1.0 inch to 4.9 inches d.b.h. which will grow into pole or saw-timber size trees of sound quality.

Rough cull trees. Trees that fail to qualify as sound timber because of poor form, excessive limbiness, or other sound defect. Volumes shown for rough cull trees also include the limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of sound saw-timber-size hardwoods. Scrub oak and noncommercial species are included in this group.

Rotten cull trees. Trees that fail to qualify as sound timber because of rotten defect.

Palms. All species of Sabal 5.0 inches d.b.h. and larger with at least 12 feet of clear stem. All palm trees were considered to be free of rotten defect.

Species Groups

Softwoods. All of the pines, eastern redcedar, Atlantic white-cedar, pond cypress, and baldcypress.

Soft hardwoods. Black and water tupelos, sweetgum, and soft maple. The other soft-textured hardwoods include sweetbay, cottonwood, willow, basswood, southern magnolia, and yellow-poplar.

Hard hardwoods. All of the oaks, hickories, and ash. The other hard-textured hardwoods include river birch, elm, hackberry, and sycamore.

Volume Estimates

Board-foot volume. The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of saw-timber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords. For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. For cull trees similar volumes are included plus the volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of saw-timber size hardwoods.

Volume in cubic feet. Same as volume shown in cords except bark is not included.

International 1/4-inch log rule. A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905\ (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord. A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, 90 cubic feet of softwoods (wood and bark) or 80 cubic feet of hardwoods (wood and bark).

Gum Naval Stores Conditions

Round timber. A minimum of 15 longleaf and slash pine trees 9.0 inches d.b.h. or larger per acre that have never been worked for naval stores.

Working. Longleaf and slash pine trees that are now being worked for naval stores.

> Front-faced. Turpentine tree species on which the front or first face is now being worked.
>
> Back-faced. Turpentine tree species on which the front face has been worked out and on which a back (second or third, etc.) face is being worked.

Resting. Longleaf and slash pine trees with a worked-out front face at least 5 feet high and on which back-facing has not been started.

Abandoned. Longleaf and slash pine trees on which faces less than 5 feet high were discontinued.

Worked-out. Longleaf and slash pine trees on which two or more faces at least 5 feet high have been worked out and with no possibility of supporting another face.

Stocking

Stocking classifications were based on the number of stems present by d.b.h. classes. Areas having the minimum numbers of trees listed below, either in a single diameter class or in combinations, were considered adequately stocked.

DBH	Minimum number trees per acre
2 inches	800
4 inches	600
6 inches	450
8 inches	300
10 inches	200
12 inches	150
14 inches	110

RELIABILITY OF THE DATA

In general, there are two possible sources of error in estimating timber volumes and land areas in various categories under procedures used by the Forest Survey. These are (1) common mistakes resulting from errors of judgment in classifying or recording data, mistakes made in compiling the information, and errors in the application of techniques, and (2) sampling errors.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of the data. Common errors are eliminated or minimized through training and frequent check cruises in the field and through complete editing and machine verification of office procedures in compiling the data.

Sampling errors (standard errors of estimate) carry no connotation of faulty work but are theoretical measures of the reliability of the estimates based on the variability exhibited by the sample data. Sampling errors were the only measurable errors involved in computing the reliability of the data.

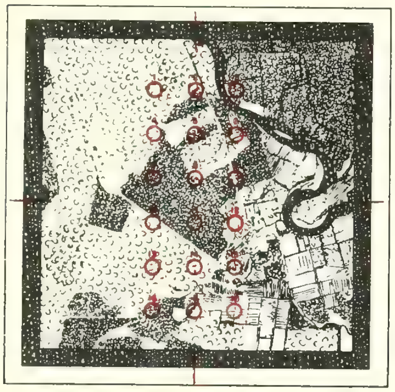
Forest area. The sampling intensity was sufficient to provide an estimate of the forest acreage of the Unit with a standard error of ± 0.5 percent. This indicates the probabilities are two out of three that the actual forest area is within ± 0.5 percent of the given estimate.

Timber volumes. The standard error of estimate of the board-foot volume of saw timber in the Unit is ± 3.9 percent. Here again, the probabilities are two out of three that the actual volume is ± 3.9 percent of the given estimate. Corresponding errors for the total volume in cords or cubic feet were not computed, but they should be smaller.

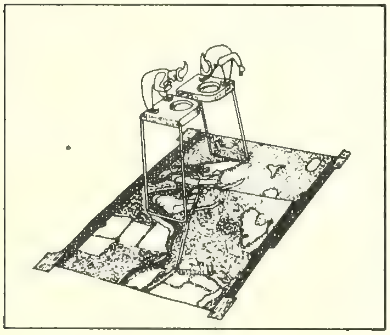
Use of county data. The tables showing area and timber volumes by county are included to facilitate the grouping of county data in any combination desired. Statistics for individual counties have a standard error of estimate for forest area ranging from ± 1.4 to ± 3.7 percent, and for board-foot volume from ± 11.3 to ± 18.6 percent. Obviously, detailed comparisons between counties are subject to considerable error and should be avoided. Grouping a number of counties together will increase the reliability of the area and volume estimates and make these data sufficiently accurate for most general purposes.

HOW THE FOREST INVENTORY IS MADE

The present system of inventory is based upon interpretation of aerial photographs supplemented by cruising of randomly selected ground plots. The county is the basic work unit. Steps in the procedure are as follows:

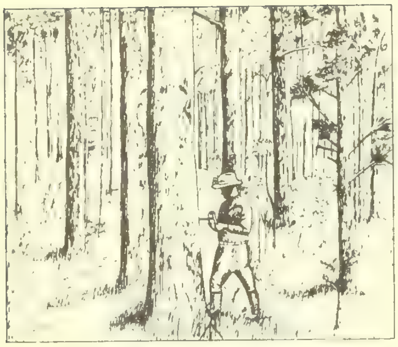


1. Acreages of forest land are estimated with the use of a dot grid placed on every 3rd contact print along flight lines in each county. The proportion of dots falling on forest areas when applied to the gross area of the county yields a preliminary estimate of the acreage of forest land. This is later revised after certain field checks.

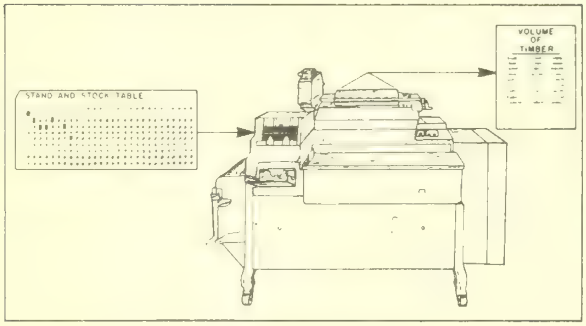


2. Every 3rd plot listed as forest in step one is classified into forest type, stand class, and density class by careful stereoscopic analysis of the photographs. The proportion of plots falling in each classification when applied to the forest area of the county gives the area in each classification. These areas are revised following ground checking.

3. Timber cruisers make a detailed on-the-ground tally of every 3rd large sawtimber photo plot, every 4th small sawtimber, every 6th pole timber, every 13th seedling and sapling plot, and every 26th poorly stocked plot, to obtain volume, growth, cull and mortality data, and to check accuracy of photo classification. They also check a sample of the idle and agricultural plots to determine the area reverting to forest.



4. Growth estimates are based on increment borings taken from trees of the various diameters and species in each forest type and stand class.



5. All field data are sent to the Asheville office for editing and are placed on punch cards for machine tabulation. Statistical techniques are used to correct for changes in photo classification, and to determine final figures on areas, volumes, and growth.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia.

No. 22 - Southern Forests as a Source of Pulpwood.

No. 23 - 1946 Pulpwood Production by County in the Southeast.

No. 24 - Southern Pulpwood Production and the Timber Supply.

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina.

No. 26 - 1946 Commodity Drain by County from South Carolina Forests.

No. 27 - 1947 Pulpwood Production by County in the Southeast.

No. 28 - South Carolina's Forest Resources, 1947.

No. 29 - 1948 Pulpwood Production by County in the Southeast.

No. 30 - Forest Resources of Northeast Florida, 1949.

No. 31 - Forest Resources of Central Florida, 1949.

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FOREST RESOURCES OF SOUTH FLORIDA, 1949

by J. F. McCormack, Forester
Division of Forest Economics

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA
I. T. HAIG, Director

In cooperation with
FLORIDA FOREST SERVICE
TALLAHASSEE, FLORIDA
C. H. COULTER, State Forester

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

The State of Florida was first inventoried by the Forest Survey in the period 1934-36 and reports presenting the findings have been published. Since then, better forest management, more intensive forest use, changes in land use, and other factors have caused changes in the forest growing stock that can only be measured accurately by on-the-ground surveys. Field work on a resurvey of the forest resources of Florida was completed in August 1949. This progress report presents area and volume statistics of the resurvey in South Florida (Survey Unit No. 4). Statistical reports containing resurvey data for Northeast Florida (Survey Unit No. 1), Northwest Florida (Survey Unit No. 2), and Central Florida (Survey Unit No. 3) have already been published. The complete statistical data for the State will be used to prepare an analytical report which will interpret the findings and focus attention upon the principal forest problems.

ACKNOWLEDGMENTS

The author gratefully acknowledges the assistance received from C. H. Coulter, State Forester, and his staff in facilitating the Survey work and in providing additional personnel to augment and intensify the collection of data in the field.

The Division of Forest Economics is under the direction of James W. Cruikshank. The timber inventory field work was under the supervision of Mackay B. Bryan. Photo interpretation work was done by N. F. Force and R. C. Aldrich. Sample plot work was under the direction of Fritz Lorentzen and W. A. McCarty.

Office compilation of the data was under the direction of Miss Agnes Creasman, assisted by Mrs. Christine Paxton, Miss Priscilla Walker, and Miss Camilla Young.

CONTENTS

Page

1949 FACTS AND SIGNIFICANT CHANGES - - - - - - - - - - - - - - - - - 1

TABLES FOR THE SURVEY UNIT, 1949

AREA

1. Gross area by broad use class - - - - - - - - - - - - - - - 4
2. Ownership of land - 5
3. Commercial forest area by forest type and stand size - - - - 6

NET VOLUME OF SAW TIMBER

4. By species group and stand size - - - - - - - - - - - - - 6
5. By species group and diameter class - - - - - - - - - - - 7
6. By forest type and stand size - - - - - - - - - - - - - - 7

NET VOLUME OF ALL TREES (in thousand cords)

7. By species group and stand size - - - - - - - - - - - - - 8
8. By species group and diameter class - - - - - - - - - - - 8
9. By species group and class of material - - - - - - - - - - 9
10. By forest type and stand size - - - - - - - - - - - - - - 9

NET VOLUME OF ALL TREES (in thousand cubic feet)

11. By species group and diameter class - - - - - - - - - - - 10
12. By species group and class of material - - - - - - - - - - 10

AVERAGE VOLUME PER ACRE

13. Of saw timber by forest type and stand size - - - - - - - - 11
14. Of all trees by forest type, stand size, and tree quality - 11

GENERAL

15. Area of poorly stocked stands by plantability class - - - - 12
16. Commercial forest area by forest type and degree of stocking 12
17. Number of trees by species group, quality class, and tree size - 13

TABLES FOR COUNTIES, 1949

18. County area by broad use class - - - - - - - - - - - - - - 14
19. Ownership of commercial forest land - - - - - - - - - - - - 14
20. Net volume of timber by county - - - - - - - - - - - - - - 15

DEFINITION OF TERMS - 16

RELIABILITY OF THE DATA - 20

HOW THE FOREST INVENTORY WAS MADE - - - - - - - - - - - - - - - - 21

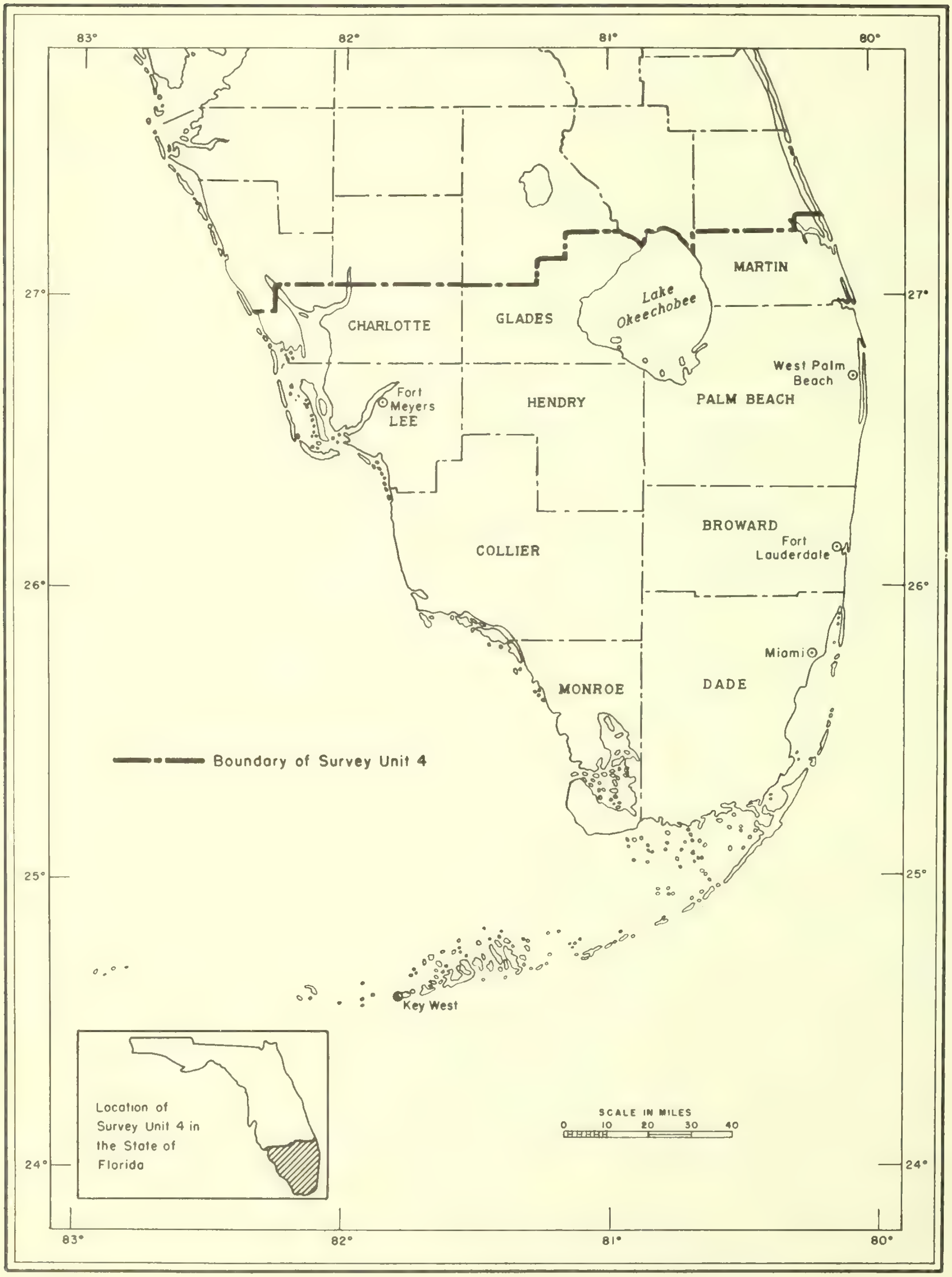

Figure 1.—Counties in South Florida included in Survey Unit No. 4

FOREST RESOURCES OF SOUTH FLORIDA

This report presents data on the forest resources of South Florida, including the group of ten counties designated as Survey Unit No. 4 (fig. 1). The data were obtained from a resurvey which was started in March 1949 and completed in June 1949. The field work was based on the combined use of aerial photographs, cover type maps, and ground plot examinations to obtain current statistics on forest area and timber volumes. Because of the noncommercial character of the timber, the areas of mangrove forest along the seacoast and forested areas on the Florida Keys were not surveyed.

South Florida is an unusual area from a forest sampling standpoint. Timber volumes are considerably lower than elsewhere in the State, and the distribution of the timber is poor. The classification of nonforest and nonproductive forest land is often difficult. Also, many swamp and marshy areas are nearly inaccessible making ground observations slow and difficult. The intensity of the Forest Survey work was lowered in this Unit because it is not heavily forested. As a result, the data presented herein are subject to greater sampling errors than for other portions of the State, and are shown in considerably less detail. The original Forest Survey of South Florida was completed in 1936. Some comparisons between the original and present surveys can be drawn to indicate changes in forest areas and timber volumes during the intervening period.

1949 FACTS AND SIGNIFICANT CHANGES

Acreage of forest land: Approximately 42 percent of the total land area in South Florida is occupied by forests. However, one-third of the forest land is considered nonproductive because it lacks the capacity to produce timber of commercial size or because the timber is so scattered and isolated it could not be economically harvested. In 1949, about 2.2 million acres in this Survey Unit were classified as commercial forest land. The original survey in 1936 found very nearly the same acreage in commercial forest land, indicating little, if any, change during the period. It is interesting to note that marsh lands in the Everglades occupy a slightly greater acreage in the Unit than the forests do. The forest and marsh areas combined make up nearly 86 percent of the total land area.

Area by forest types: Slash pine and cypress together occupy 93 percent of the commercial forest land in the Unit, with the pine type predominating. The total acreage in softwood types is now only slightly lower than was found in the first survey. However, since 1936, the area in pine types has increased 11 percent, while the area of cypress types decreased. This change is believed due to a general lowering of the water table in the Unit, caused by drainage and irrigation projects. As sites have become drier, scattered slash pine reproduction has become established in some areas where only stunted or scrub cypress grew before.

Saw-timber volume decreases: The total volume of saw timber standing in South Florida in 1949 was 865 million board feet. Practically all of this volume is in slash pine and cypress timber, with a negligible amount in other pine species and hardwoods. The total volume of saw timber in 1936 was nearly 1.6 billion board feet, and the decrease during the period amounts to 45 percent. In proportion to total volume, pine species have been cut more heavily than cypress, and at present the volume in these two species groups is about equal. Only 5 percent of the commercial forest land supports stands of saw timber.

Table A.--Change in volume of saw timber, 1936 to 1949

Species group	1936	1949	Change
	Thousand bd. ft.	Thousand bd. ft.	Percent
Pines	941,400	434,300	-54
Hardwoods[1]	12,200	1,300	-89
Cypress	618,800	429,100	-31
All species	1,572,400	864,700	-45

[1] Excludes volume of hardwoods 12 inches d.b.h.

The decrease in board-foot volume is primarily due to heavy cutting operations during the period between surveys. In 1936, 58 percent of the pine and cypress saw-timber volume was in old-growth stands located in the Big Cypress Swamp in Collier County and northward in Hendry, Lee, and Charlotte Counties. These virgin stands were among the last to be cut over in the State because they were in scattered and inaccessible areas. Several large lumber companies, along with smaller mills, have been operating in this area for a number of years and much of the timber volume in the larger stands has been removed. Practically all of the timber volume decrease can be accounted for in Collier, Hendry, Lee, and Charlotte Counties.

In this area, and elsewhere in the Unit, the growing livestock industry has contributed to the decrease of timber volume through development of pasture or grazing lands. In some instances, timber and stumps have been removed from forest land in the pine types, and improved pastures created. In others, most of the timber has merely been removed, and restocking of the forest land is held down through the use of fire. The changes due to land clearing do not appear to be significant from an area standpoint. However, the clearing, cutting, and burning have caused a material reduction in the volume of standing pine timber.

Total sound tree volume decreases: The net cubic-foot volume of all sound trees 5.0 inches d.b.h. and larger also decreased heavily, following the trend found in saw-timber volumes. In 1949, the total volume of sound trees was 354 million cubic feet, a decrease of 34 percent since 1936. Here again, the decrease in pine and cypress species groups is due to heavy cutting during the period, much of it in virgin stands of timber. The decrease in volume of sound hardwood trees is accounted for by a higher proportion of cull in the hardwood species. In terms of cubic feet, the total volume of hardwood trees in all quality classes in both surveys was approximately the same. However, in 1949, there was a heavy increase in rotten cull hardwoods, particularly in the larger diameter classes, and a reduction of volume in both sound and rough cull trees.

Table B.--Change in volume of all trees 5.0 inches d.b.h. and larger, 1936 to 1949

Species group	Sound tree volume			Cull tree volume		
	1936	1949	Change	1936	1949	Change
	Million cu. ft.	Million cu. ft.	Percent	Million cu. ft.	Million cu. ft.	Percent
Pines[1]	270	160	-41	15	3	-80
Hardwoods[2]	10	3	-70	20	26	+30
Cypress	258	191	-26	68	78	+15
All species	538	354	34	103	107	+ 4

[1] Excluding turpentine butts.

[2] Excluding limb volume of sound hardwood trees.

All of the areas supporting stands of scrub cypress and hardwoods were considered nonproductive forest land because of their inability to grow timber of commercial size. The volumes on these areas were excluded and do not appear in the above table.

Ninety percent of the forest land is understocked: Approximately two million acres of commercial forest land in South Florida are in an understocked condition, having less than 40 percent of the required number of sound trees per acre. Of this area, 1.5 million acres were found to be less than 10 percent stocked, and the remainder fell in the range of stocking from 10 to 39 percent.

Table 1.--Gross area[1] by broad use class, 1949

Class of use	Area	
	Acres	Percent
Forest land:		
Commercial	2,174,200	24.3
Reserved	24,200	0.3
Non-productive	1,115,600	12.5
Total forest	3,314,000	37.1
Non-forest land:		
Agricultural - active	640,400	7.2
Agricultural - idle	237,500	2.7
Marsh	3,419,600	38.3
Dunes and beaches	5,300	0.1
Urban and other[2]	237,300	2.6
Total non-forest	4,540,100	50.9
Total land area	7,854,100	88.0
Total water area	1,073,800	12.0
All classes	8,927,900	100.0

1/ From U. S. Bureau of the Census, 1940.

2/ Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

Table 2.--Ownership of land, 1949

Class of ownership	All land		Commercial forest land	
	Acres	Percent	Acres	Percent
Public land:				
National forest	--	--	--	
Indian	78,500	1.0	36,100	1.7
Other federal	786,900	10.0	4,600	0.2
Total federal	865,400	11.0	40,700	1.9
State	871,200	11.1	92,800	4.3
County and municipal	59,100	0.8	21,000	0.9
Total public	1,795,700	22.9	154,500	7.1
Private land	6,058,400	77.1	2,019,700	92.9
All classes	7,854,100	100.0	2,174,200	100.0

Table 3.--Commercial forest area by forest type and stand size, 1949

Forest type	Saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
	Acres	Acres	Acres	Acres	Acres
Pine[1]	33,700	123,100	108,600	1,490,100	1,755,500
Cypress	69,300	119,400	15,000	64,500	268,200
Total sftwds.	103,000	242,500	123,600	1,554,600	2,023,700
Hardwoods[2]	—	3,500	13,200	84,800	101,500
Palm	—	—	—	49,000	49,000
All types	103,000	246,000	136,800	1,688,400	2,174,200
Percent	4.7	11.3	6.3	77.7	100.0

1/ Principally slash pine type with small acreages of longleaf pine and sand pine.

2/ Principally lowland hardwood type.

Table 4.--Net volume[1] of saw timber by species group and stand size, 1949

(in thousand board feet)

Species group	Saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine	120,400	68,400	13,500	232,000	434,300
Cypress	303,900	81,600	22,800	20,800	429,100
Total sftwds.	424,300	150,000	36,300	252,800	863,400
Hardwoods[2]	400	1,500	—	—	1,900
All species	424,700	151,500	36,300	252,800	865,300
Percent	49.1	17.5	4.2	29.2	100.0

1/ Log scale, International 1/4-inch rule.

2/ Ninety-five percent of the saw-timber-size hardwood trees were considered cull from a saw-timber standpoint.

Table 5.--Net volume1/ of saw timber by species group and diameter class, 1949

Species group	10-12 inches2/	14-18 inches	20+ inches	All diameters	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Pines	286,700	137,000	10,600	434,300	50.2
Cypress	271,400	128,500	29,200	429,100	49.6
Total sftwds.	558,100	265,500	39,800	863,400	99.8
Hardwoods	600	1,300		1,900	0.2
All species	558,700	266,800	39,800	865,300	100.0
Percent	64.6	30.8	4.6	100.0	

1/ Log scale, International 1/4-inch rule.

2/ Ten-inch hardwoods are not included.

Table 6.--Net volume1/ of saw timber by forest type and stand size, 1949
(in thousand board feet)

Forest type	Saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine	116,900	71,100	13,500	232,000	433,500
Cypress	307,800	78,900	17,900	12,200	416,800
Total sftwds.	424,700	150,000	31,400	244,200	850,300
Hardwoods		1,500	4,900	8,600	15,000
All types	424,700	151,500	36,300	252,800	865,300
Percent	49.1	17.5	4.2	29.2	100.0

1/ Log scale, International 1/4-inch rule.

Table 7.--Net volume[1] of all trees by species group and stand size, 1949

SOUND TREES (in thousand cords)

Species group	Saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pines	381	695	115	1,094	2,285
Cypress	1,186	1,146	67	91	2,490
Total sftwds.	1,567	1,841	182	1,185	4,775
Hardwoods	4	23	5	19	51
All species	1,571	1,864	187	1,204	4,826
Percent	32.6	38.6	3.9	24.9	100.0
TREES OF OTHER QUALITY CLASSES (in thousand cords)					
Rough culls:					
Softwoods	123	260	12	193	588
Hardwoods[2]	24	36	10	141	211
Rotten culls	145	241	59	178	623
Palms	38	210	59	1,700	2,007
All other classes	330	747	140	2,212	3,429

Table 8.--Net volume[1] of all trees by species group and diameter class, 1949

SOUND TREES (in thousand cords)

Species group	Pole trees		Saw-timber trees			All diameters
	6 inches	8 inches	10 inches	12 inches	14+ inches	
Pines	463	659	535	276	352	2,285
Cypress	695	725	386	327	357	2,490
Total sftwds.	1,158	1,384	921	603	709	4,775
Hardwoods	18	23	5	2	3	51
All species	1,176	1,407	926	605	712	4,826
Percent	24.4	29.1	19.2	12.5	14.8	100.0
TREES OF OTHER QUALITY CLASSES (in thousand cords)						
Rough culls:						
Softwoods	260	164	107	29	28	588
Hardwoods[2]	39	43	67	26	36	211
Rotten culls	68	140	74	93	248	623
Palms	63	284	1,095	492	73	2,007
All other classes	430	631	1,343	640	385	3,429

[1] Sound wood and bark.

[2] Includes scrub oak and noncommercial species.

Table 9.--Net volume[1] of all trees by species group and class of material, 1949

(in thousand cords)

Species group	SOUND TREES				CULL TREES	
	Saw-timber trees		Pole timber trees	Total sound trees	Rough[2]	Rotten
	Sawlog portion	Upper stem				
Pines	951	212	1,122	2,285	45	--
Cypress	862	208	1,420	2,490	543	475
Total sftwds.	1,813	420	2,542	4,775	588	475
Hardwoods	4	1	46	51	211	148
All species	1,817	421	2,588	4,826	799	623
Percent	37.7	8.7	53.6	100.0	56.2	43.8

[1] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

[2] Includes scrub oak and noncommercial species.

Table 10.--Net volume[1] of all trees by forest type and stand size, 1949

SOUND TREES (in thousand cords)

Forest type	Saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine	367	819	115	1,096	2,397
Cypress	1,204	1,025	55	65	2,349
Total sftwd.	1,571	1,844	170	1,161	4,746
Hardwood		20	17	43	80
All types	1,571	1,864	137	1,204	4,826
Percent	32.6	38.6	3.9	24.9	100.0

ROUGH AND ROTTEN CULLS (in thousand cords)

Forest type	Saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwood	292	504	59	245	1,100
Hardwood		33	22	267	322
All types	292	537	81	512	1,422
Percent	20.5	37.8	5.7	36.0	100.0

[1] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

Table 11.--Net volume[1] of all trees by species group and diameter class, 1949

SOUND TREES (in thousand cubic feet)

Species group	Pole trees		Saw-timber trees			All diameters
	6 inches	8 inches	10 inches	12 inches	14+ inches	
Pines	27,189	44,265	39,795	20,866	28,264	160,379
Cypress	45,654	54,185	31,227	27,678	31,693	190,437
Total sftwds.	72,843	98,450	71,022	48,544	59,957	350,816
Hardwoods	1,170	1,591	280	127	239	3,407
All species	74,013	100,041	71,302	48,671	60,196	354,223
Percent	20.9	28.3	20.1	13.7	17.0	100.0

TREES OF OTHER QUALITY CLASSES (in thousand cubic feet)

Rough culls:						
Softwoods	17,208	12,013	8,399	2,524	2,369	42,513
Hardwoods[2]	2,252	2,748	4,669	1,953	3,097	14,719
Rotten culls	4,356	10,304	5,889	8,101	21,399	50,049
Palms	5,922	28,157	110,765	50,901	7,289	203,034
All other classes	29,738	53,222	129,722	63,479	34,154	310,315

[1] Excluding bark.

[2] Includes scrub oak and noncommercial species.

Table 12.--Net volume[1] of all trees by species group and class of material, 1949

(in thousand cubic feet)

Species group	SOUND TREES				CULL TREES	
	Saw-timber trees		Pole timber trees	Total sound trees	Rough[2]	Rotten
	Sawlog portion	Upper stem				
Pines	72,484	16,441	71,454	160,379	3,167	16
Cypress	74,188	16,410	99,839	190,437	39,346	38,922
Total sftwds.	146,672	32,851	171,293	350,816	42,513	38,938
Hardwoods	298	68	3,041	3,407	14,719	11,111
All species	146,970	32,919	174,334	354,223	57,232	50,049
Percent	41.5	9.3	49.2	100.0	53.3	46.7

[1] Excluding bark and volume of palms shown in table 11.

[2] Includes scrub oak and noncommercial species.

Table 13.--Average volume[1] per acre of saw timber by forest type and stand size, 1949

(in board feet)

Forest type	Saw-timber stands	Pole timber stands	Other stand sizes	All stands
Pine	3,469	578	154	247
Cypress	4,442	661	379	1,554
Hardwood	--	429	138	148
All types	4,123	616	163	407

[1] Log scale, International 1/4-inch rule.

Table 14.--Average volume[1] per acre of all trees by forest type, stand size, and tree quality, 1949

(in standard cords)

Forest type	Saw-timber stands		Pole timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[2]	Sound	Cull	Sound	Cull	Sound	Cull
Pine	10.9	0.1	6.7	0.3	0.8	0.1	1.4	0.1
Cypress	17.4	4.1	8.6	4.0	1.5	2.8	8.8	3.7
Hardwood	--	--	5.7	9.4	0.6	2.0	0.8	2.1
All types	15.3	2.8	7.6	2.2	0.8	0.3	2.2	0.7

[1] Sound wood and bark, excluding volume of palms.

[2] Sound trees; cull trees.

Table 15.--Area of poorly stocked stands and unstocked areas by plantability classes, 1949

Forest type[1]	No planting required[2]	Suitable for machine planting	Hand planting required	All classes
	Acres	Acres	Acres	Acres
Pine	408,000	858,000	224,100	1,490,100
Hardwood	7,300	3,700	16,300	27,300
All types	415,300	861,700	240,400	1,517,400
Percent	27.4	56.8	15.8	100.0

[1] Lowland hardwoods and cypress types not classified.

[2] Sufficient seed trees present or area is restocking naturally.

Table 16.--Commercial forest area by forest type and degree of stocking, 1949

STOCKING IN SOUND TREES

Forest type	Degree of stocking[1]					Total area
	0-9 percent	10-39 percent	40-69 percent	70-99 percent	100+ percent	
	Acres	Acres	Acres	Acres	Acres	Acres
Pine	1,364,600	346,300	36,500	8,100	--	1,755,500
Cypress	51,400	50,100	35,900	78,800	52,000	268,200
Hardwood	61,900	39,600	--	--	--	101,500
Palm	49,000	--	--	--	--	49,000
All types	1,526,900	436,000	72,400	86,900	52,000	2,174,200
Percent	70.2	20.1	3.3	4.0	2.4	100.0
STOCKING IN TREES OF ALL QUALITY CLASSES[2]						
Pine	1,300,300	345,000	71,800	20,200	18,200	1,755,500
Cypress	26,400	33,700	25,100	42,600	140,400	268,200
Hardwood	19,500	34,000	21,200	9,600	17,200	101,500
Palm	11,000	16,000	5,500	5,500	11,000	49,000
All types	1,357,200	428,700	123,600	77,900	186,800	2,174,200
Percent	62.4	19.7	5.7	3.6	8.6	100.0

[1] Including trees 1.0 inches d.b.h. and larger.

[2] Includes sound trees, cull trees, and palm.

Table 17.--Number of trees[1] by species group, quality class, and tree size, 1949

(in thousands of trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Saw-timber trees	All trees
Yellow pines:				
Sound trees	30,927	12,565	6,518	50,010
Rough culls	242	117	122	481
Rotten culls	347	5	---	352
Total	31,516	12,687	6,640	50,843
Cypress:				
Sound trees	58,062	19,573	6,667	84,302
Rough culls	26,875	5,997	974	33,846
Rotten culls	15,922	4,562	2,944	23,428
Total	100,859	30,132	10,585	141,576
Hardwoods:				
Sound trees	9,411	695	32	10,138
Rough culls[2]	35,644	1,904	248	37,796
Rotten culls	8,998	1,447	379	10,824
Total	54,053	4,046	659	58,758
Palms	([3])	5,587	12,675	18,262
All species	186,428	52,452	30,559	269,439

[1] All trees 1.0 inch d.b.h. and larger.

[2] Includes scrub oak and noncommercial trees.

[3] Data not recorded.

Table 18.--County area by broad use class, 1949

County	Total area[1]	Non-forest area		Forest land		
		Land	Water	Non-commercial[2]	Commercial	
	Acres	Acres	Acres	Acres	Acres	Percent
Broward	780,800	666,800	2,600	63,200	48,200	6.2
Charlotte	532,500	86,800	88,600	47,500	309,600	69.7
Collier	1,356,100	302,000	92,000	300,500	661,600	52.3
Dade	1,349,800	1,113,900	19,700	141,900	74,300	5.6
Glades	574,700	360,700	4,400	65,900	143,700	25.2
Hendry	761,000	465,500	2,600	71,800	221,100	29.2
Lee	643,200	81,200	99,300	86,700	376,000	69.1
Martin	372,400	103,900	37,700	22,900	207,900	62.1
Monroe	907,500	388,400	271,400	243,200	4,500	0.7
Palm Beach	1,649,900	970,900	455,500	96,200	127,300	10.7
Unit total	8,927,900	4,540,100	1,073,800	1,139,800	2,174,200	27.7

[1] Gross area from Bureau of the Census, 1940.

[2] Non-productive forest land plus forest land withdrawn from commercial use.

Table 19.--Ownership of commercial forest land by county, 1949

County	Private		Public					
			National forest	Other[1] federal	State	County, city, town	Total public	
	Acres	Percent	Acres	Acres	Acres	Acres	Acres	Percent
Broward	32,400	67.2	--	400	14,500	900	15,800	32.8
Charlotte	260,800	84.2	--	200	47,000	1,600	48,800	15.8
Collier	651,700	98.5	--	400	9,500	--	9,900	1.5
Dade	60,400	81.3	--	200	13,200	500	13,900	18.7
Glades	137,300	95.5	--	6,100	300	--	6,400	4.5
Hendry	187,900	85.0	--	30,000	3,200	--	33,200	15.0
Lee	368,300	98.0	--	1,800	1,300	4,600	7,700	2.0
Martin	204,900	98.6	--	--	2,900	100	3,000	1.4
Monroe	4,500	100.0	--	--	--	--	--	--
Palm Beach	111,500	87.6	--	1,600	900	13,300	15,800	12.4
Unit total	2,019,700	92.9	--	40,700	92,800	21,000	154,500	7.1

[1] Includes Indian tribal allotments.

Table 20.--Net volume[1] of timber by county, 1949

County	Saw-timber trees	All trees 5.0 inches d.b.h. and larger	
		Sound trees	Cull trees[2]
	Thousand bd. ft.	Thousand cords	Thousand cords
Broward	9,300	49	12
Charlotte	54,200	232	61
Collier	442,500	2,104	863
Dade	30,400	267	--
Glades	75,100	377	35
Hendry	128,100	620	118
Lee	60,500	611	139
Martin	21,800	196	166
Monroe	5,200	56	5
Palm Beach	38,200	314	23
Unit total	865,300	4,826	1,422

[1] Board-foot volumes are in terms of log scale, International 1/4-inch rule. Volumes in cords include bark and exclude volumes in palm trees.

[2] Limbs of sound sawlog-size hardwood trees are included in cull volumes.

DEFINITION OF TERMS

Land-Use Classes

Forest. Land bearing forest growth, land from which the forest has been removed and which shows no evidence of any other recent land use, or former agricultural land which now has a five-percent stocking of trees. Subdivided into the following classes:

Commercial: Land bearing, or capable of bearing, timber of commercial character and available now or prospectively for commercial use.

Reserved: Forest land in public ownership upon which commercial timber cutting is prohibited.

Non-productive: Forest land of such low productivity or so inaccessible that commercial timber will not be produced.

Non-forest. Land less than five percent stocked with trees and showing evidence of non-forest use.

Agriculture: Under cultivation or in pasture, including farm yards on active farms.

Idle: Land previously cultivated or pastured but now idle or abandoned. If reverting to forest there must be less than five percent stocking of trees.

Marsh: Low, boggy, non-forested land usually supporting a heavy growth of grass.

Dunes and beaches: Non-forested sand dunes or coastal beaches.

Urban and other: Includes towns, suburban areas being developed for residential or other urban purposes, school yards, cemeteries, industrial sites, roads, railroads, power lines, and other rights-of-way. Scattered areas of timber within exterior boundaries of cities or villages are also included.

Water: Includes both the small ponds and lakes less than 40 acres in size and streams, sloughs, and canals less than ten chains in width classed as "land area" by the Bureau of the Census. Also includes the "inland water" listed by the Census. On coastal areas the water-line is the mean high-tide mark; tidal flats are classed as water.

Forest Types

Pine types. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with southern yellow pines predominating.

Cypress types. Stands in which coniferous species comprise at least 25 percent of the dominant and codominant trees, with cypress predominating.

Hardwood types. Stands in which mixed hardwoods such as black gum, maple, sweet bay, oak, and ash predominate and comprise at least 75 percent of the dominant and codominant trees. Stands of scrub oak and other noncommercial hardwood species are included.

Palm types. Stands in which there is at least a five percent stocking of merchantable palm trees and less than five-percent stocking of other sound commercial species.

Stand-Size Classes

Saw timber. Stands containing at least 1,500 board feet net, International 1/4-inch log rule, per acre in sound, live, softwood trees 9.0 inches d.b.h. or larger or hardwood trees 11.0 inches d.b.h. or larger.

Pole timber. Stands at least 10 percent stocked with pole-size or larger timber, with at least one-half the minimum stocking in pole sizes, and which have less than 1,500 board feet net per acre of saw timber.

Seedling and sapling. Stands less than 10 percent stocked by pole-size or larger trees and with less than 1,500 board feet net per acre, but at least 40 percent stocked with commercial species. Eight hundred seedlings or saplings per acre are considered full stocking.

Poorly stocked and unstocked. Stands of pole-size or larger trees that are less than 10 percent stocked, seedling or sapling stands less than 40 percent stocked, or nonstocked forest land.

Diameters

D.b.h. (diameter at breast height). Stem diameter in inches, outside bark, measured at 4½ feet above the ground.

Diameter class. All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint; e.g., trees 7.0 to and including 8.9 inches are in the 8-inch class.

Tree Classification

Sound saw-timber trees. Softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound saw timber.

Sound pole-timber trees. Straight-boled trees between 5.0 inches d.b.h. and saw-timber size.

Sound sapling-size trees. Trees 1.0 inch to 4.9 inches d.b.h. which will grow into pole- or saw-timber-size trees of sound quality.

Rough cull trees. Trees that fail to qualify as sound timber because of poor form, excessive limbiness, or other sound defect. Volumes shown for rough cull trees also include the limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of sound saw-timber-size hardwoods. Scrub oak and noncommercial species are included in this group.

Rotten cull trees. Trees that fail to qualify as sound timber because of rotten defect.

Palms. All species of Sabal 5.0 inches d.b.h. and larger with at least 12 feet of clear stem. All palm trees were considered to be free of rotten defect.

Volume Estimates

Board-foot volume. The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of saw-timber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords. For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. For cull trees similar volumes are included plus the volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of saw-timber-size hardwoods.

Volume in cubic feet. Same as volume shown in cords except bark is not included.

International 1/4-inch log rule. A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 \quad 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord. A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, 90 cubic feet of softwoods (wood and bark) or 80 cubic feet of hardwoods (wood and bark).

Stocking

Stocking classifications were based on the number of stems present by d.b.h. classes. Areas having the minimum numbers of trees listed below, either in a single diameter class or in combinations, were considered adequately stocked.

DBH	Minimum number trees per acre
2 inches	800
4 inches	600
6 inches	450
8 inches	300
10 inches	200
12 inches	150
14 inches	110

RELIABILITY OF THE DATA

In general, there are two possible sources of error in estimating timber volumes and land areas in various categories under procedures used by the Forest Survey. These are (1) common mistakes resulting from errors of judgment in classifying or recording data, mistakes made in compiling the information, and errors in the application of techniques, and (2) sampling errors.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of the data. Common errors are eliminated or minimized through training and frequent check cruises in the field and through complete editing and machine verification of office procedures in compiling the data.

Sampling errors (standard errors of estimate) carry no connotation of faulty work but are theoretical measures of the reliability of the estimates based on the variability exhibited by the sample data. Sampling errors were the only measurable errors involved in computing the reliability of the data.

Forest area. The sampling intensity was sufficient to provide an estimate of the forest acreage of the Unit with a standard error of ± 0.9 percent. This indicates the probabilities are two out of three that the actual forest area is within ± 0.9 percent of the given estimate.

Timber volumes. The standard error of estimate of the board-foot volume of saw timber in the Unit is ± 10.3 percent. Here again, the probabilities are two out of three that the actual volume is ± 10.3 percent of the given estimate. Corresponding errors for the total volume in cords or cubic feet were not computed, but they should be smaller.

Use of county data. The tables showing area and timber volumes by county are included to facilitate the grouping of county data in any combination desired. Statistics for individual counties are subject to considerable error, and detailed comparisons between counties should be avoided. Grouping a number of counties together will increase the reliability of the area and volume estimates and make these data sufficiently accurate for most general purposes.

HOW THE FOREST INVENTORY WAS MADE

The regular Forest Survey procedures using aerial photographs for preliminary estimates of forest area and forest stand size classes could not be used throughout South Florida because aerial photographs at a suitable scale were not available. In the southern and eastern portions of the Unit, cover type maps prepared by the Soil Conservation Service and the University of Florida were used in place of aerial photographs.

Acreages of forest land were estimated through the use of dot grid overlays on either aerial photographs or cover type maps. These estimates were later corrected and adjusted to Forest Survey standards on the basis of checks made on field observation plots.

Where aerial photographs were used in determining forest area, every 3rd plot listed as forest was classified by forest type and stand size through careful stereoscopic analysis. Where cover type maps were used, the forest areas were classified by forest type and stand size through the use of ground observation plots taken at fixed intervals along randomly selected line segments. These observation plots were also used to sample all cover type data plotted on the maps and to revise these data to meet Forest Survey definitions of land use.

Field plots were then selected at fixed intervals either on aerial photographs or along the line segments, and timber cruisers made a detailed on-the-ground tally of each plot to obtain data on timber volumes, growth, and mortality.

All of the field data were then sent to the Asheville office for editing and punching in cards for machine tabulation. Statistical techniques were used to correct for changes in land use classification and to determine final figures on forest areas and timber volumes.

Agriculture--Asheville

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia.

No. 22 - Southern Forests as a Source of Pulpwood.

No. 23 - 1946 Pulpwood Production by County in the Southeast.

No. 24 - Southern Pulpwood Production and the Timber Supply.

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina.

No. 26 - 1946 Commodity Drain by County from South Carolina Forests.

No. 27 - 1947 Pulpwood Production by County in the Southeast.

No. 28 - South Carolina's Forest Resources, 1947.

No. 29 - 1948 Pulpwood Production by County in the Southeast.

No. 30 - Forest Resources of Northeast Florida, 1949.

No. 31 - Forest Resources of Central Florida, 1949.

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TIMBER PRODUCTION AND COMMODITY DRAIN FROM FLORIDA'S FORESTS, 1948

by
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Division of Forest Economics

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE; NORTH CAROLINA

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In cooperation with
FLORIDA FOREST SERVICE
TALLAHASSEE, FLORIDA
C.H. COULTER, State Forester

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to make a survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeast--Virginia, North Carolina, South Carolina, Georgia, and Florida--the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, N. C.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the supply of timber, (2) to ascertain the rate at which this supply is increasing through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption, and the probable future trend in requirements for forest products, and (5) to interpret and correlate these findings to aid in the formulation of private and public policies regarding forest land management.

Florida was first inventoried by the Forest Survey in the period 1934-36 and reports presenting the findings have been published. A resurvey of the State's timber resources was completed in August 1949 and four statistical reports presenting forest area and timber volume data for each of the four major forest areas have been published. Following the timber inventory, information regarding the amount of timber cut in 1948 from Florida's forests was obtained from primary wood-using plants, railroads, tie buyers, and others. The data so obtained provide the basis for this report, which deals with the forest industries and the drain they create upon the timber resource.

ACKNOWLEDGMENTS

The author gratefully acknowledges the assistance received from C. H. Coulter, State Forester, and his staff in facilitating the survey of forest industries and in providing additional personnel to collect data in the field.

The Division of Forest Economics is under the immediate direction of James W. Cruikshank. The drain survey is under the supervision of James F. McCormack. Field work was done by M. B. Bryan, N. F. Force, R. C. Aldrich, Fritz Lorentzen, and a number of members of the Florida Forest Service.

Office compilation of the data was under the direction of Miss Agnes Creasman, assisted by Mrs. Christine Paxton, Miss Priscilla Walker, and Miss Camilla Young.

CONTENTS

Page

INTRODUCTION - 1

PRODUCTION OF FOREST PRODUCTS - - - - - - - - - - - - - - - - - - 2

Lumber - 3
Pulpwood - 4
Veneer - 6
Fuel wood, fence posts, and farm timbers - - - - - - - - - 8
Poles and piling - 9
Hewn cross ties - 9
Naval stores - 9
Other products - 10
Comparison with total 1936 production - - - - - - - - - - - 10

COMMODITY DRAIN - 11

Utilization of trees cut - - - - - - - - - - - - - - - - - - 12
Size of trees cut - 13
Drain by species group - - - - - - - - - - - - - - - - - - - 14
Drain by forest product - - - - - - - - - - - - - - - - - - - 16
Geographic source of commodity drain - - - - - - - - - - - - 17

APPENDIX - 20

Production and drain tables - - - - - - - - - - - - - - - - 21
How the data was obtained - - - - - - - - - - - - - - - - - - 34
Reliability of the data - - - - - - - - - - - - - - - - - - - 34

TIMBER PRODUCTION AND COMMODITY DRAIN FROM FLORIDA'S FORESTS, 1948

It is generally recognized that Florida's prosperity depends in a large measure upon tourists, citrus and truck crops, and the livestock industry. Without doubt these will continue to be major revenue producers, but the State would be short-sighted indeed if it did not fully recognize its other assets. Forest land and timber are among these--the base for the leading manufacturing industry in the State.

Finished forest products accounted for about 30 percent of the total value added by manufacturing in 1947. Furthermore, the value of these products when ready for shipment was 232 million dollars (table 1) compared to 115 million as the gross packed value of all citrus. Tourism, which is generally conceded to provide about one-third of the income of Floridians, returned an estimated 790 million dollars to the people of the State in 1947. Thus, for every 3.4 dollars received from tourists, one dollar was received from the sale of finished forest products.

Table 1.--Value of forest products manufactured in Florida, 1947[1]

Product	Value added by manufacture	Value of products shipped
	Thousand dollars	Thousand dollars
Pulp, paper, & board	48,203	[illegible]
Lumber & planing mill products	[illegible]	[illegible]
Wooden boxes	9,225	[illegible]
Treated poles, piles, etc.	4,257	[illegible]
Steam distilled naval stores	486	[illegible]
Wood naval stores	5,560	9,520
Mill work	3,966	[illegible]
Other wood products[2]	320	688
Total	98,852	232,366

[1] 1947 Census of Manufactures.

[2] Excludes wooden furniture.

Some 700 sawmills, distributed from Pensacola to the Keys, cut over one-half billion board feet of lumber annually, eight large pulp mills consume one and one-quarter million cords of wood each year, veneer plants use nearly 100 million board feet of logs to make crates and boxes for citrus and truck crops, and wood naval stores plants annually harvest nearly three-fourths of a million tons of stumps. Nearly 14 million trees are being chipped for their gum. Millions more are cut for cross ties, poles, piling, fence posts, and fuel wood. Altogether, the value added by the manufacture of rough logs, bolts, stumps, and crude gum into finished products amounted to nearly 100 million dollars in 1947.

PRODUCTION OF FOREST PRODUCTS

In 1948 the production of forest products was fully as great as in 1947, and in the case of pulpwood considerably greater. Altogether, 286 million cubic feet of wood were harvested from Florida's forests. Approximately 90 percent was pine and cypress, the rest various species of hardwoods.

Twenty-three primary forest products (table 7) were harvested, but pulpwood and sawlogs were by far the leading items (fig. 1). These, together with old-growth pine stumps, fuel wood, and veneer bolts accounted for 94 percent of the total production, expressed in cubic feet of wood used.

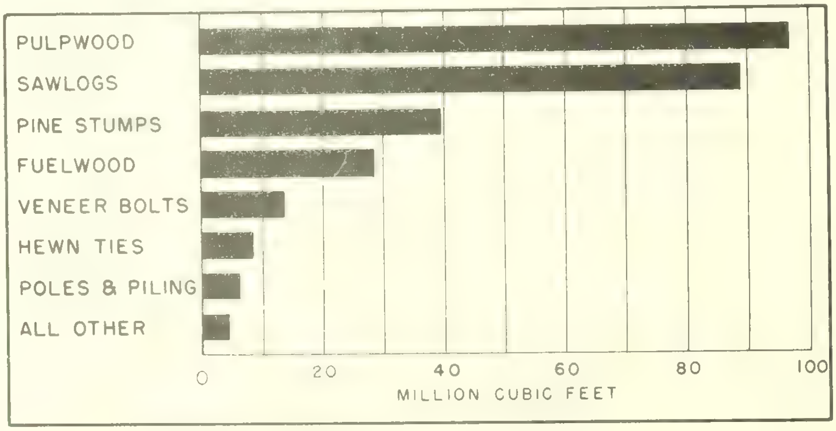

Figure 1.--Wood used for primary forest products, 1948

Lumber

In 1948 the production of lumber, including sawn cross ties, by Florida sawmills was [1]571 million board feet. Compared to [2]1947, total production increased about seven percent. Softwood production was 11 percent greater, while the cut of hardwood lumber was one-third less. Pine amounted to 79 percent of all the lumber sawed in Florida. Sixteen percent of the total was cypress. Hardwood, accounting for only six percent of the total, was cut chiefly from the gums, bay, magnolia, and red oaks (table 2).

Table 2.--Lumber production by species

Species	Production	
	Thousand bd. ft.	Percent
Softwoods:		
Yellow pine	448,328	78.6
Cypress	89,412	15.7
Cedar	850	0.1
Total softwoods	538,590	94.4
Hardwoods:		
Gums, tupelo and black	10,514	1.8
Red oaks	6,433	1.1
Bay and magnolia	5,220	0.9
Sweetgum	5,590	1.0
White oaks	1,948	0.3
Ash	1,024	0.2
Maple	466	0.1
Other hardwoods	961	0.2
Total hardwoods	32,156	5.6
Total all species	570,746	100.0

Taylor County ranked as the number one producer of lumber, accounting for 13 percent of the total production in the State. Escambia County was second with 4.6 percent, followed by Duval, Polk, Marion, Alachua, and Hillsborough, each with more than four percent. These seven counties produced two-fifths of all lumber sawed in Florida (table 8).

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[1] The 550 million board feet reported by the Station in the Southern Lumber Journal of May, 1950 did not include a late production report of a large mill.

[2] Census of Manufactures, 1947, U. S. Bureau of the Census.

A total of 684 sawmills produced lumber in 1948 (fig. 2) and 123 additional mills were idle. In contrast to some other southern states, large mills accounted for a relatively high proportion of the total cut. For instance, 17 mills produced 36 percent of all the lumber; and only 40 mills sawed over one-half of it (table 3). A large share of the sawmills in the State were insignificant producers of lumber; for instance, a group of 400 small mills cut only 6.2 percent of the lumber.

Table 3.--Lumber production by mill class

Mill class	Active mills	Pine	Cypress	Cedar	Hardwoods	Total	
Thousand bd. ft. per year	Number	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
1- 299	404	29,710	3,620	84	2,069	35,483	6.2
300- 499	68	21,266	1,919	520	1,582	25,287	4.4
500- 999	68	40,677	3,221	45	1,706	45,649	8.0
1,000-2,999	104	152,858	14,297	186	5,348	172,689	30.3
3,000-4,999	23	66,441	11,574	--	5,095	83,110	14.6
5,000 & over	17	137,376	54,781	15	16,356	208,528	36.5
Total	684	448,328	89,412	850	32,156	570,746	100.0

The general trend of lumber production is downward. During the first three decades of the present century when Florida still had ample supplies of virgin timber, the annual production averaged close to one billion board feet per year. In 1930, with the virgin timber practically gone and a major depression well under way, lumber production dropped abruptly and in 1932 reached a low of only 420 million board feet, as shown in figure 3.[3] A gradual recovery was made until, in 1936, 860 million board feet were produced. This remained the high point from that date until the present, as the demands of World War II, intense as they were, stimulated production only to a slight degree. The general trend during those war years was steadily downward. Some recovery was evident by 1946, but the 1947 and 1948 cuts were again lower.

Pulpwood

The greatest change in Florida's forest industry in the past 20 years has been the establishment and expansion of the pulp and paper industry in

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[3] 1925-1946 data from U.S.D.A. Misc. Pub. No. 661, 1947 Production from Census of Manufactures - 1947, Bureau of the Census, 1948 Production - U. S. Forest Service.

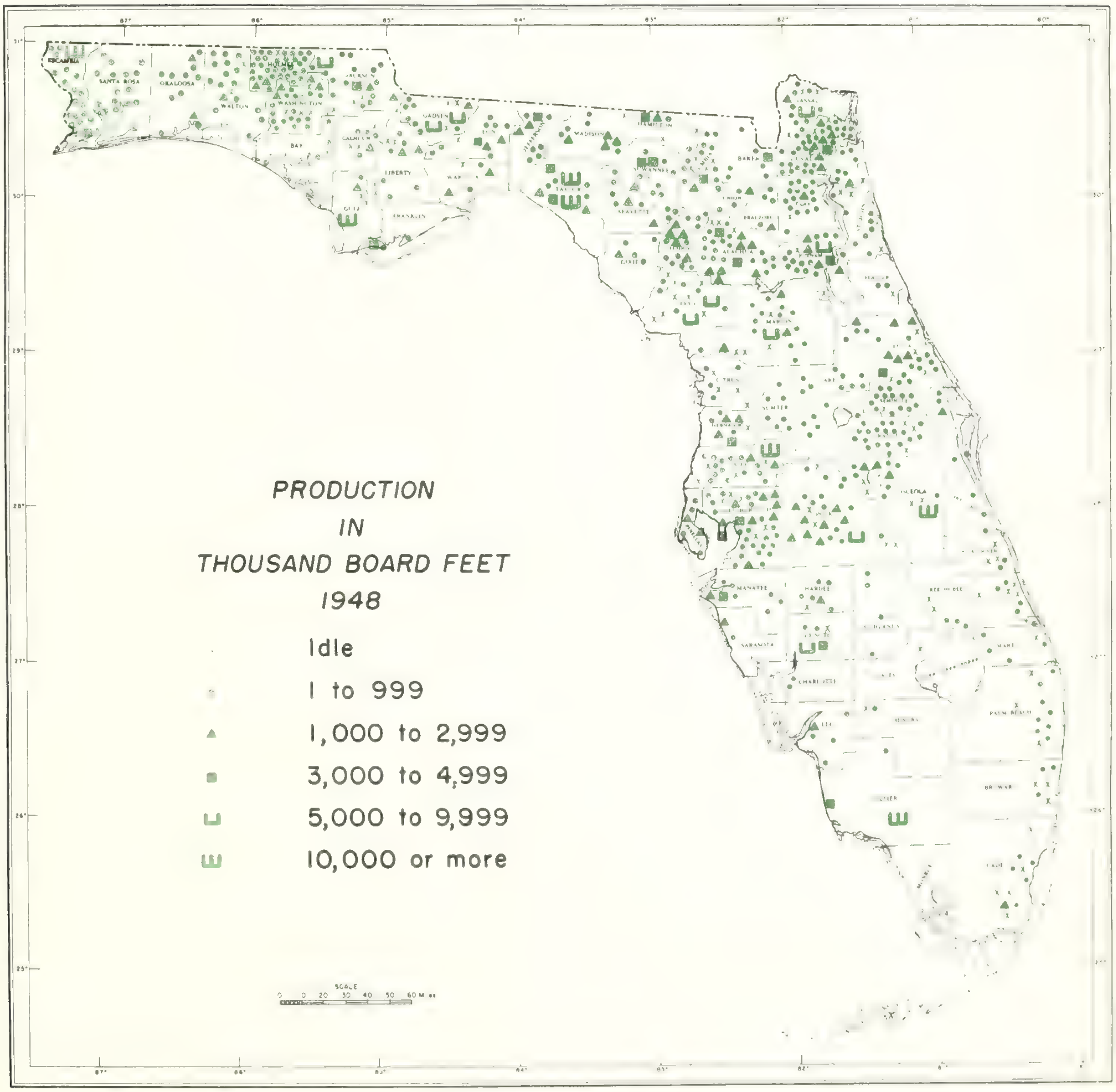

Figure 2.--Location and production class of sawmills, 1948

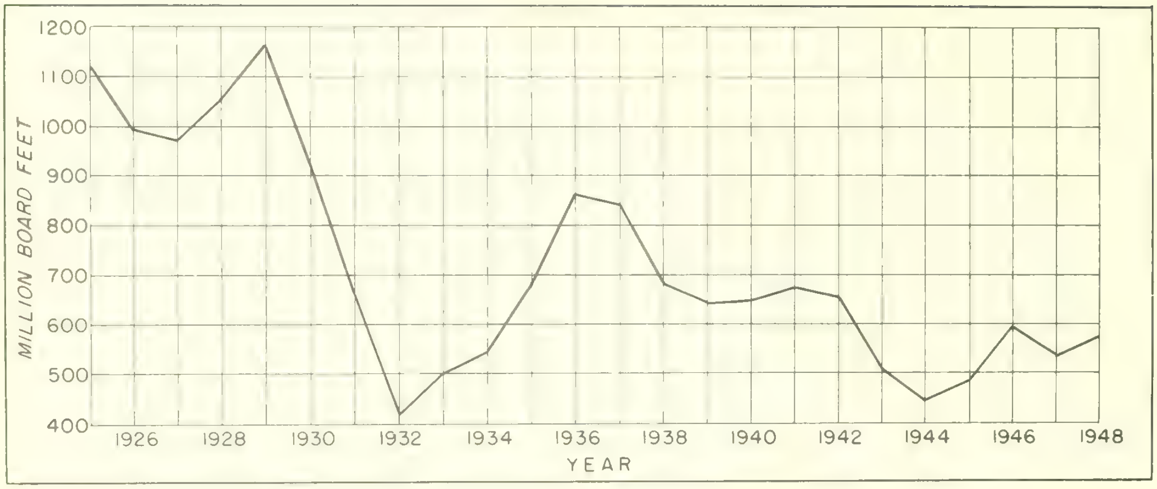

Figure 3.--Lumber production in Florida, 1925-1948

the State. The first Florida pulp mill went into production in 1931, followed by three in 1938, and increasing to a total of eight mills distributed across northern Florida in 1948. Annual pulpwood production more than doubled in the period 1939 through 1949 (fig. 4), and in 1948 totaled 1,221,000 cords.

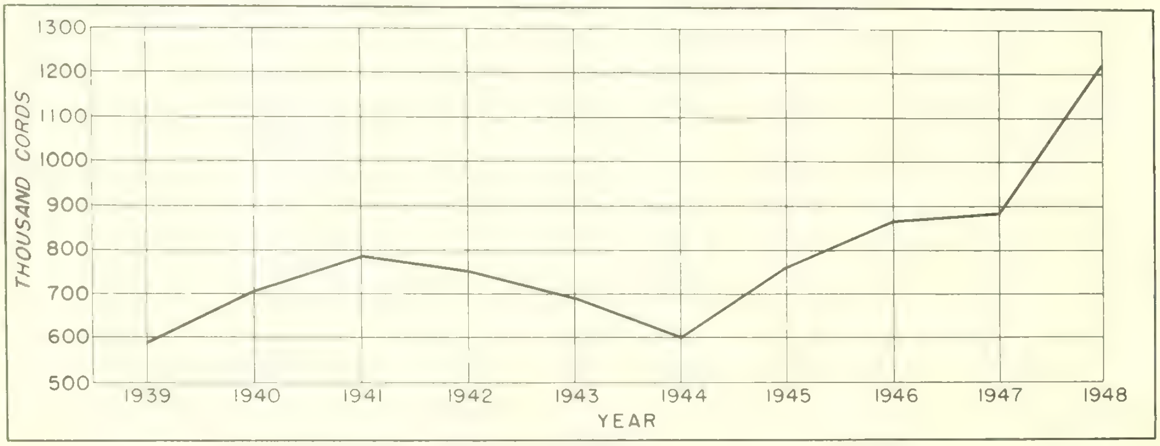

Figure 4.--Pulpwood production in Florida, 1939-1948

Veneer

Veneer logs and bolts cut in Florida totaled 86 million board feet in 1948. The 34 active plants in central and northern Florida (fig. 5) used 96 percent of the total. The rest went to seven veneer plants in Alabama and Georgia. Eighty-two percent of the volume was hardwood, mainly in the soft-textured hardwood group. Most of the remainder was pine.

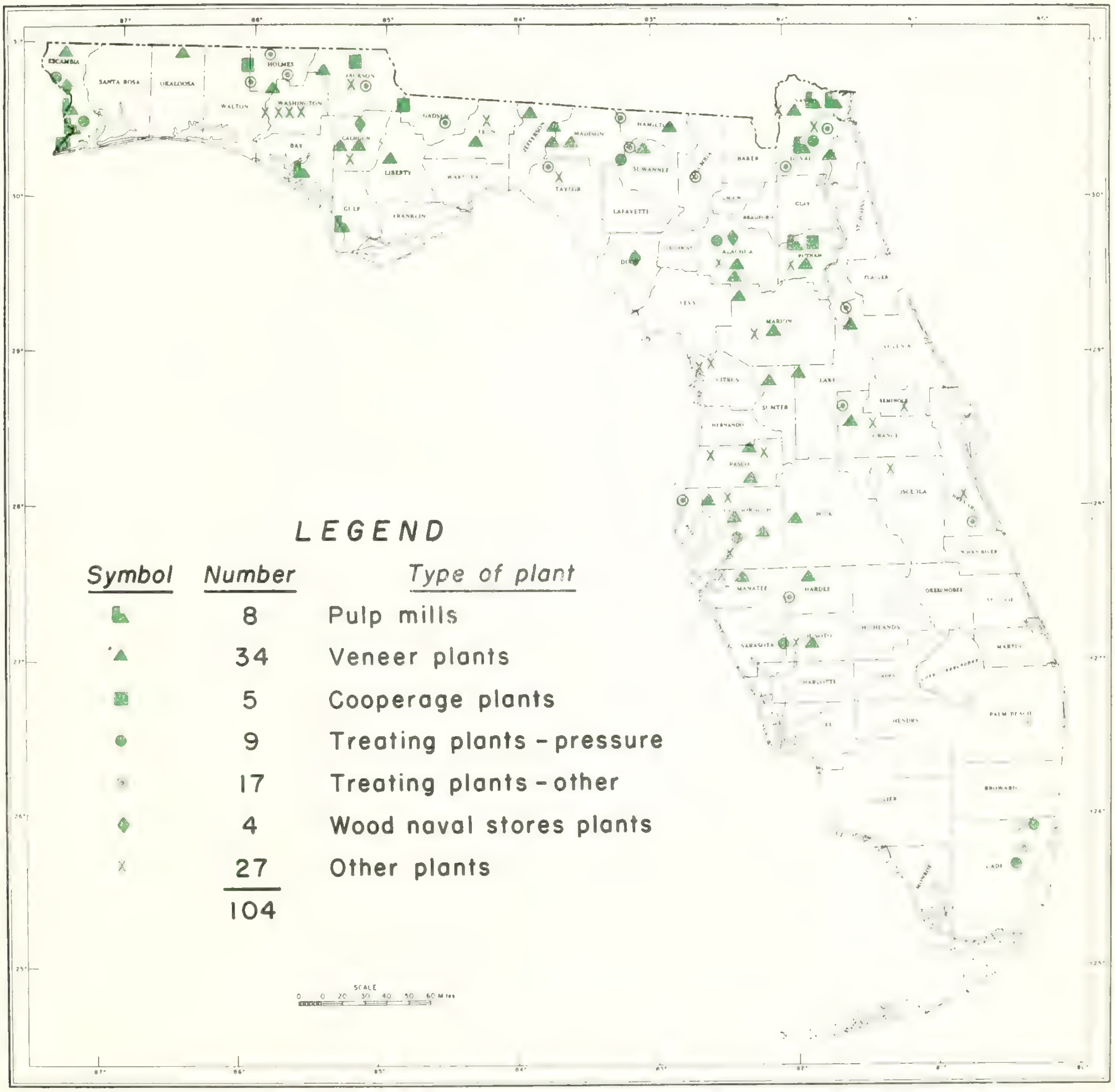

Figure 5.--Location of primary forest products plants, excluding sawmills, 1948

The 1948 production of veneer logs from Florida timber was one-third below the production reported by the Forest Survey in 1936, the year when the first complete survey was made by the Forest Service.

Fuel Wood, Fence Posts, and Farm Timbers

Fuel wood, fence posts, and farm timbers came from a wide range of materials (table 4). Since the greatest part of this timber was produced on farms for use by the farmer, the type of wood most readily available was usually the one chosen.

Only 13 percent of the 352,000 cords of fuel wood produced was cut from sound live trees of commercial species. Almost one-half was from dead material, mainly pine stumps, fallen branches, and dead trees. One-fourth of the fuel-wood production was from cull trees and scrub oak.

Table 4.--Kind of material used for fuel wood, fence posts, and farm timbers

Material used	Product		
	Fuel-wood	Fence posts	Farm timbers
	Percent	Percent	Percent
Sound live trees 5 inches d.b.h. and larger	13	19	69
Sound saplings under 5 inches d.b.h.	(1/)	10	27
Cull trees and scrub oak	25	9	1
Dead material	48	60	3
Mill and logging waste	14	2	0
Total	100	100	100

1/ Less than one half of one percent.

Fuel-wood production in 1948 was only 27 percent of the 1936 production. Wood is still the most-used fuel for heating rural homes, but the use of other fuels is becoming common. A large proportion of the rural population now uses other fuels for cooking, and most tobacco farmers have converted to oil for tobacco curing.

Sixty percent of the 1,710,000 fence posts produced were cut from dead material, mainly dead heart pine and cypress. Only one-fifth of the total production was from sound live trees 5.0 inches d.b.h.or larger. The number of fence posts treated with creosote or other preservatives amounted to approximately 12 percent of the total production in 1948. One-third of the treated posts were from trees under 5.0 inches d.b.h. Total production of fence posts in 1948 was 36 percent below the 1936 total.

Farm timbers included such items as sills and rafters for rough buildings, crop stack poles and poles for cattle pens. Florida's 1948 production of this material was very small, amounting to only one-fourth of one percent of the volume used for fuel wood.

Poles and Piling

Pole and piling production in 1948 was slightly over 400 thousand pieces, or two and one-fourth times the 1936 production. The accelerated demand for poles in the construction of rural electric transmission lines following the war, with greater use of smaller poles, accounted for the increase. Pine trees were used almost exclusively, and nearly all such poles were treated with preservative. The 1948 production was sent to 8 pressure wood-treating plants in Florida and 13 out-of-state plants. Almost half the total went to plants outside Florida.

The bulk of the poles and piling originated in northern Florida, centering around Suwannee County. One-fourth of the total production was from Suwannee County; and almost one-half came from this and adjoining counties. Escambia, Santa Rosa, and Nassau Counties were also important centers of production.

Hewn Cross Ties

During 1948, 1.4 million cross ties were hewn from Florida timber. Only 49,000 sawn ties were produced. Almost 80 percent of the hewn ties were pine, 12 percent were cypress, and oak and gum made up most of the remainder. Production was restricted mainly to northeastern Florida. Forty percent of the ties were cut in Marion, Alachua, Columbia, Levy, and Volusia Counties.

In common with all other forest products except pulpwood and poles, hewn tie production has decreased. Even with the good economic conditions prevailing in 1948, 59 percent fewer ties were hewn than in 1936.

Naval Stores

The total annual production of turpentine and rosin from crude gum and wood in the South has fluctuated very little since 1900. Production was highest from 1927 through 1938. Some decline occurred during World War II, but in the 1946-47 season the total production increased to 28.5 million gallons of turpentine and 2.2 million 500-pound barrels of rosin. In the period since 1920 the wood naval stores industry has grown rapidly, while production from crude gum has declined. In fairly recent years the pulp industry has also started to produce sulfate turpentine as a by-product of the pulping process.

In 1920[4] over 90 percent of the turpentine and rosin produced in the United States was derived from crude gum. In the late thirties the proportion dropped below 80 percent, and in the 1946-1947 season it was below 50 percent. In that season 13.5 million barrels of turpentine were produced from crude gum, in contrast to 15.0 million from pulpwood and old-growth seasoned heartwood and stumps of longleaf and slash pine. In the naval stores year ending in March 1948, the national production of turpentine was from the following raw materials: crude gum 46 percent, dead pine wood 33 percent, and pulpwood 21 percent.

Data are not available to show the details of naval stores production trends in Florida by source of raw material. However, in 1922 the State accounted for 36 percent of the total production of gum naval stores; in 1948 only 22 percent. In this later year, production of turpentine from crude gum was 3.3 million gallons, compared to 8.3 million in 1922. This decline in production is reflected in the reduced number of trees being worked for turpentine. When the Forest Survey was made in Florida in 1934-1936, 36 million trees were faced; when the resurvey was made in 1948-1949, only 13 million were being worked. Production of crude gum has shifted more into Northeast Florida in the period between the two surveys, as three-fourths of the working trees are now located there. Only two-thirds of the working trees were in that area at the time of the first survey.

1948 production of pine stump wood, including a small amount of top wood, was over 700,000 tons. Production was spread over most of the State, although a rather small tonnage was shipped from South Florida. A considerable part of the total tonnage was shipped out of the State for processing.

Other Products

The 13 other minor timber products contributed only one percent to the cubic-foot volume of production in 1948. Cooperage and dimension stock lead the group, together making up three-fourths of the total.

Comparison with Total 1936 Production

In 1948 production of all primary forest products except pulpwood, poles, and piling was at a lower level than in 1936. The marked increase in the production of pulpwood, poles, and piling partially made up for the volume decrease in other products; but the combined cubic-foot production in 1948, excluding naval stores, was approximately three-fourths what it had been in 1936.

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[4] Statistical Abstract of the United States, U. S. Bureau of the Census.

COMMODITY DRAIN

Commodity drain[5] is the volume of sound live timber removed as forest products, plus the merchantable volume cut but not utilized, plus the volume of sound trees destroyed in logging operations. In 1948 the volume of timber, determined through surveys of production and woods utilization, in each of these categories was as follows:

	Volume in million cubic feet	Percent
Trees cut:		
Volume used for forest products	215.7	93.2
Merchantable volume left in woods	14.1	6.1
Merchantable trees destroyed in logging	1.7	0.7
Total commodity drain	231.5	100.0

By converting production to commodity drain in this way, the volume of timber cut and that destroyed in logging is based upon the same standards as were used in the inventory[6] of standing timber.

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[5] Commodity drain in board feet includes the volume removed from the growing stock in the sawlog portion of softwood trees 9.0 inches d.b.h. and larger, and hardwood trees 11.0 inches d.b.h. and larger.

Commodity drain in cubic feet and standard cords includes the volume removed from the growing stock in all sound trees 5.0 inches d.b.h. and larger measured to a 4.0-inch top inside bark.

[6] Refer to the following Forest Survey Releases by J. F. McCormack, Southeastern Forest Experiment Station:

No. 30. Forest Resources of Northeast Florida, 36 pp. illus. 1949
No. 31. Forest Resources of Central Florida, 36 pp.,illus. 1949
No. 32. Forest Resources of Northwest Florida, 36 pp., illus. 1950
No. 33. Forest Resources of South Florida, 21 pp., illus. 1950

Thus, forest industries, timber growers, and others interested in the timber supply can use commodity drain data (1) to locate areas where cutting is too heavy in relation to the volume of standing timber, (2) to distinguish the species and sizes that are cut more heavily than their total stand volume justifies, and (3) to locate areas that could sustain a somewhat heavier drain intensity. Perhaps a more important use is to compare drain with growth as a measure of the adequacy of current timber yields. Comparisons for different sections of the State will be made in a subsequent report.

Altogether, 937 million board feet of timber were cut from Florida's forests in 1948 (table 5). Nearly four-fifths of the total was pine. The drain on all sound trees 5.0 inches d.b.h. and larger amounted to 2.7 million cords; two-fifths of this was pulpwood.

Table 5.--Commodity drain by species group and class of timber, 1948

Species group	Saw timber	All sound timber 5.0" d.b.h. and larger
	Thousand bd. ft.	Thousand cords
Pine	730,297	2,193
Cypress and cedar	93,618	219
Soft hardwoods	94,348	247
Hard hardwoods	19,163	53
All species	937,426	2,712

Utilization of Trees Cut

The utilization of the volume in sound trees varies considerably, depending upon the product for which the trees are cut. For instance, when pine trees are cut into hewn cross ties, only 65 percent of the total cubic volume to a 4-inch minimum top is utilized (fig. 6). Utilization for sawlogs is better but is far less than that for pulpwood or fence posts. Trees cut for both of these products were frequently utilized beyond the 4-inch minimum top diameter established as the limit of merchantability on the Forest Survey inventory.

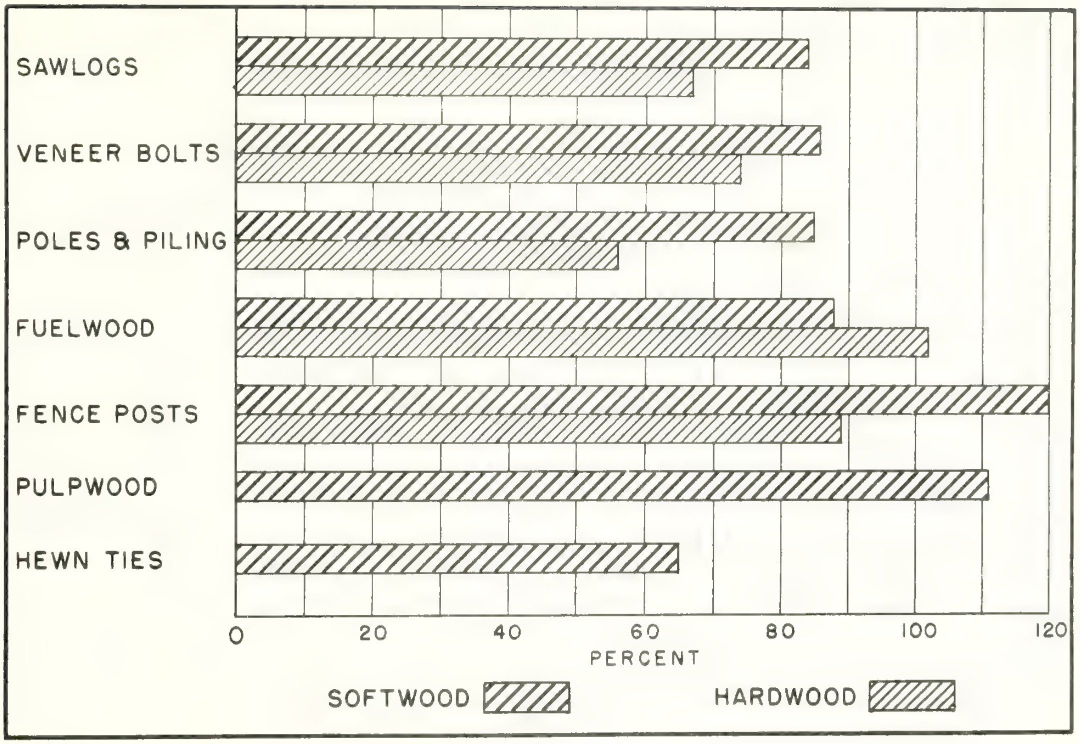


Figure 6.--Utilized cubic volume of logs and bolts expressed as a percentage of the total volume of the trees from which they are cut.

Size of Trees Cut

Forty-five percent of the total commodity drain was obtained from trees less than 13.0 inches in diameter (table 10).

Sawlog drain was greatest in the 14-inch class (fig. 7). Over one-half of the pine sawlogs were cut from trees of this diameter or smaller. On the whole, larger sizes were cut for hardwood and cypress lumber, as 86 percent of the sawlogs of these species were cut from trees over 15.0 inches in diameter. Nearly one-half the pulpwood was cut from trees ranging in diameter from 7.0 to 10.9 inches, but 43 percent was also produced from 11.0- to 14.9-inch trees, the sizes commonly used by the lumber industry. Veneer logs and bolts were, of course, produced from the larger trees; 47 percent of the drain was from those in the 22-inch d.b.h. class and larger.

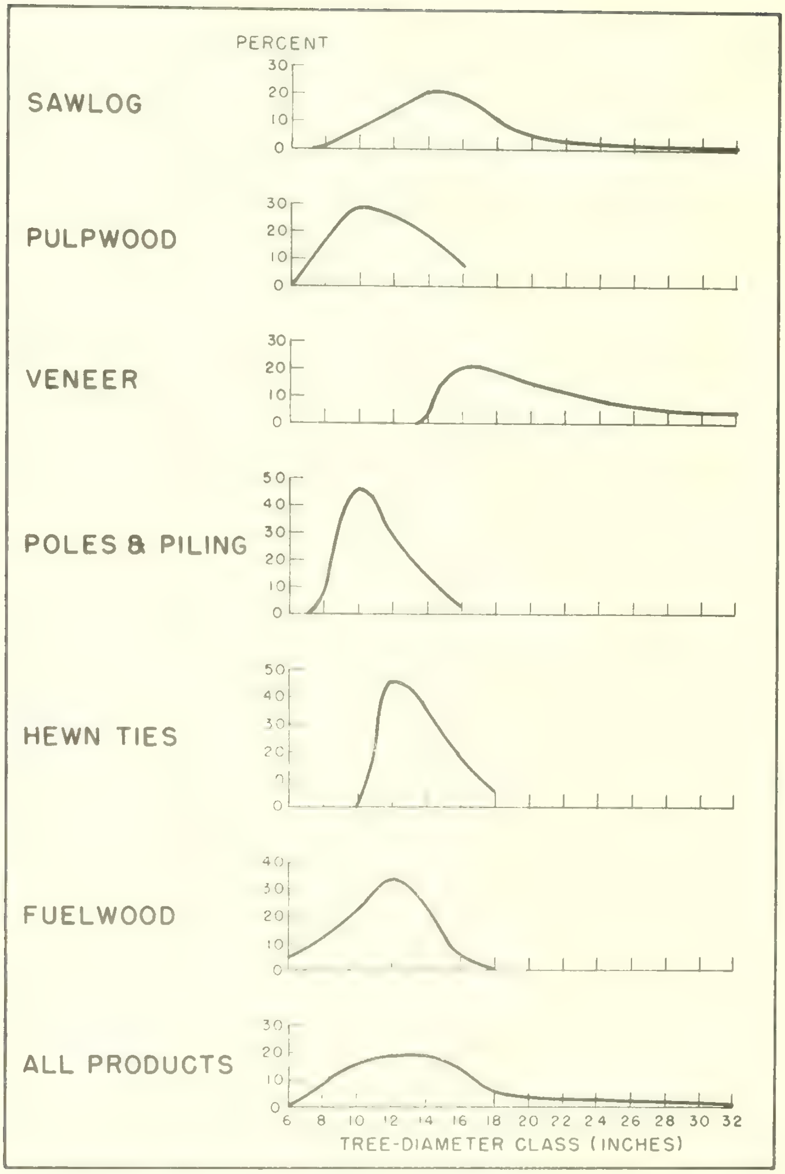


Figure 7.--Distribution of commodity drain by tree-diameter class

Drain by Species Group

The dependence of Florida's forest industries on pines is shown by the fact that 81 percent of the cubic-foot drain was from these species in 1948. The distribution of commodity drain on sound live trees of commercial species is summarized below:

Species group	Million cu. ft.	Percent
Pine	186.5	80.5
Cypress and cedar	19.4	8.4
Gums, bay, magnolia, maple, and other soft hardwoods	21.1	9.1
Oaks, ash, sycamore, beech, and other hard hardwoods	4.5	2.0
Total	231.5	100.0

In relation to the volume of available growing stock, the pines are also being cut more heavily than the hardwoods. In 1948 nearly six percent (table 6) of the board-foot volume of pine in the State was cut, in contrast to less than three percent of the cypress and hardwood. The drain on all sound pines 5.0 inches d.b.h. and larger was 4.5 percent of the growing stock volume, measured in cubic feet. This compares with slightly over one percent for the hardwoods.

Table 6.--Percent of the growing stock[1] removed as commodity drain, 1948

Kind of growing stock	Pine	Cypress and cedar	Hardwood	All species
Saw timber[2]	5.8	2.9	2.4	4.6
Sound trees 5.0 inches d.b.h. and larger:				
Measured in cubic feet	4.5	1.6	1.3	3.1
Measured in cords	3.7	1.4	1.1	2.7

[1] The net volume of sound live trees of commercial species on commercial forest land.

[2] The board-foot volume of pine, cypress, and cedar 9.0 inches d.b.h. and larger; hardwood 11.0 inches d.b.h. and larger.

Comparing the total commodity drain of pine with the sound growing stock, by county, reveals a number of areas in which the drain intensity is very high (fig. 8). These are Osceola, Duval, Suwannee, Monroe, Pasco, Seminole, and Hernando Counties. In Osceola and Duval the drain was 105 cords per thousand cords of growing stock (table 13), which is probably two to three times the amount of growth. Later studies of increment rates may show that heavy drain can be supported in some areas. On the other hand, a low drain-to-growing stock relationship does not necessarily indicate conservative cutting. In some areas it merely indicates that the pine timber is in such light stands per acre that cutting is impractical.

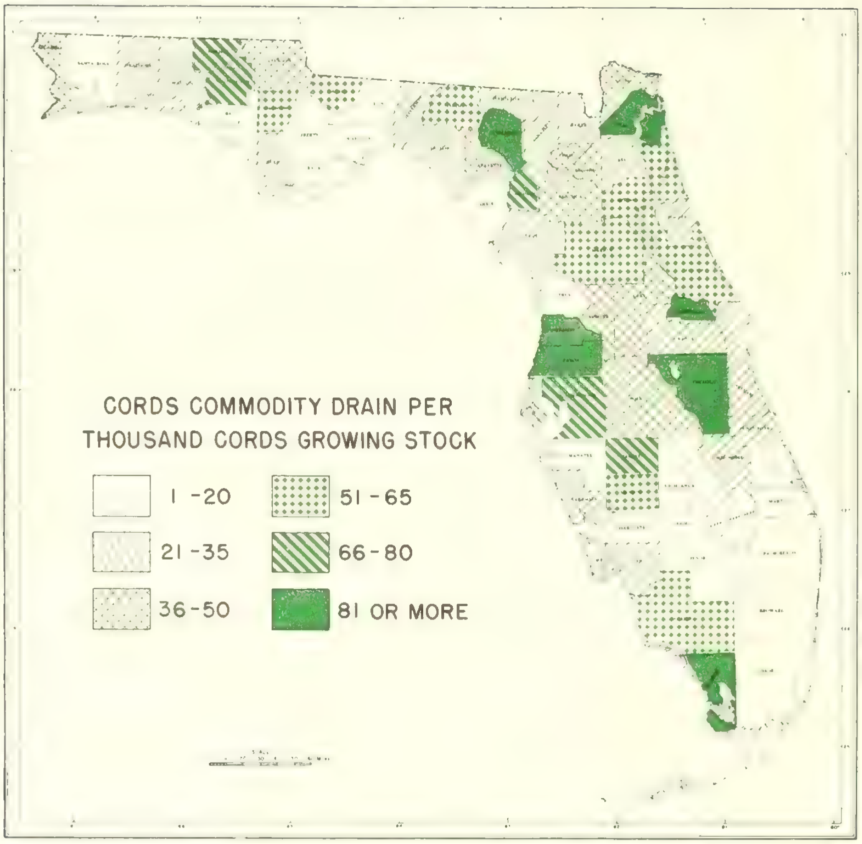


Figure 8.--Cords of pine commodity drain per thousand cords of pine growing stock, 1948

Drain by Forest Product

Sawlogs and pulpwood together account for nearly 80 percent of the cubic-foot drain on all species (fig. 9). Veneer logs are the next most important item of drain, followed by hewn ties. The drain of pine for pulpwood exceeds that for lumber; these two products, together with hewn cross ties, total 91 percent of the pine drain. Cypress is cut almost exclusively for sawlogs and hewn cross ties, while the gums, bay, and magnolia are chiefly cut into veneer. The hard hardwoods, mostly red and white oaks, are used for lumber, hewn ties, fuel wood, and a small amount of veneer.

Of the total board-foot drain, 42 percent was caused by the cutting of pine sawlogs (table 11), whereas 38 percent of the total drain on all trees 5.0 inches d.b.h. and larger was caused by the cutting of pine pulpwood (table 12).

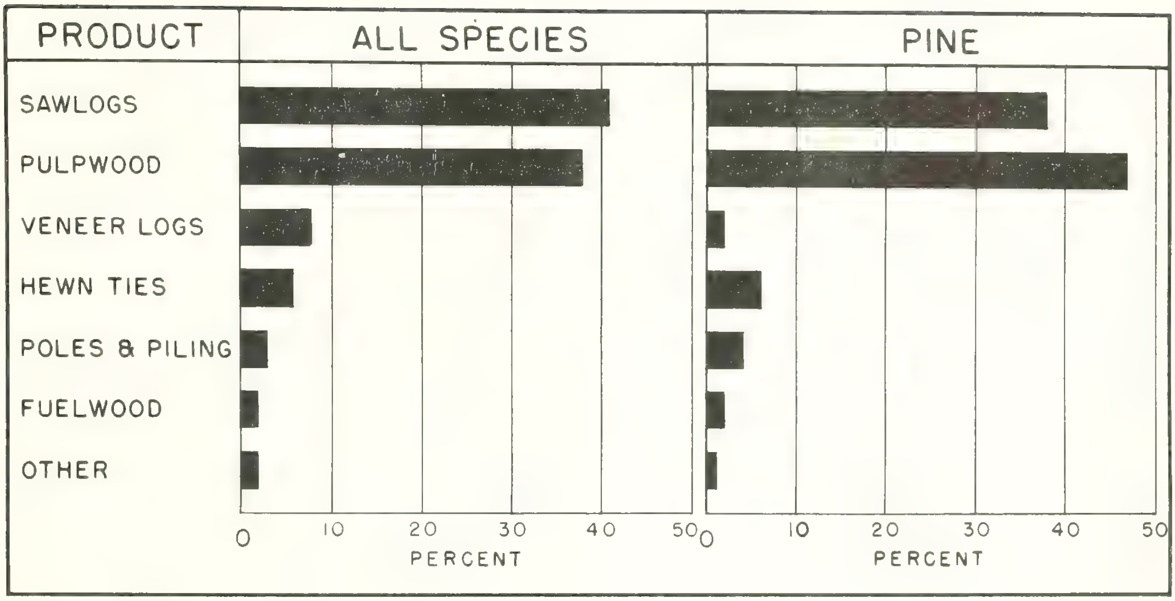
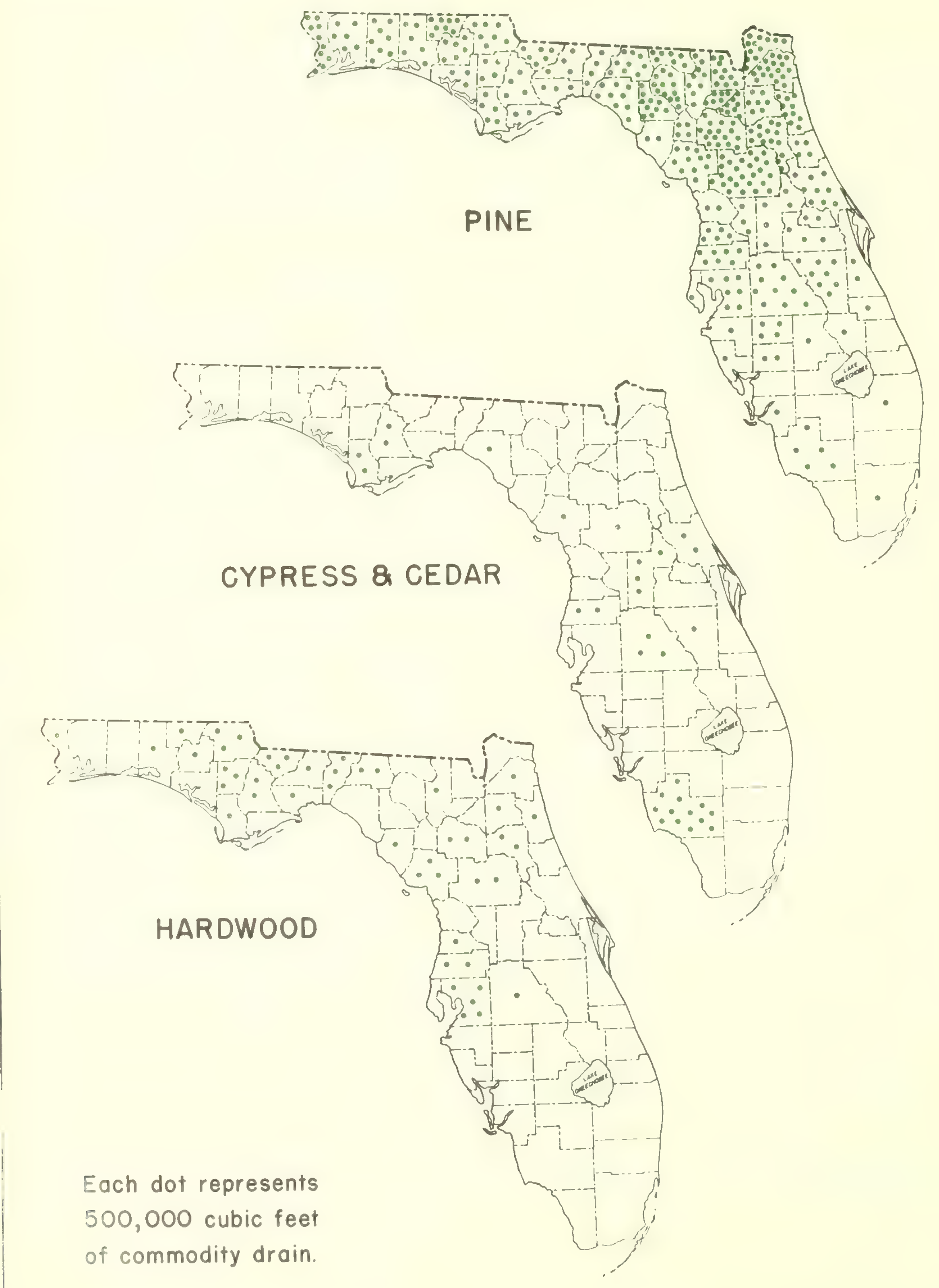


Figure 9.--Drain on pine and all species, for different timber products, 1948. Percentages refer to cubic-foot volume.

Geographic Source of Commodity Drain

The commodity drain of pine was well distributed over the State, with the highest concentration in the Northeast (fig. 10). Marion County led all the other counties in the State with a total pine drain of 153,300 cords (table 17). Drain was also high in Duval, a smaller county, where it amounted to 100,300 cords. Cypress and cedar (predominantly cypress) came mainly from the Big Cypress Swamp in Collier County, where old-growth timber was being cut. Most of the rest of the cypress drain was from Lake and Volusia Counties along the St. Johns River and in Gulf and Liberty Counties along the Apalachicola River. Hardwood drain was chiefly from the Hillsborough County area and the river bottomlands of northern Florida.

Pulpwood cutting was restricted largely to the northern part of the State (fig. 11), with the highest concentration in the Northeast. Sawlog drain was spread fairly evenly except in the sparsely timbered counties of the Southeast. The drain pattern resulting from the production of all forest products closely parallels that of sawlog drain, although the intensity is much greater.



PINE

CYPRESS & CEDAR

HARDWOOD

Each dot represents 500,000 cubic feet of commodity drain.

Figure 10.--Origin of commodity drain by species group, 1948

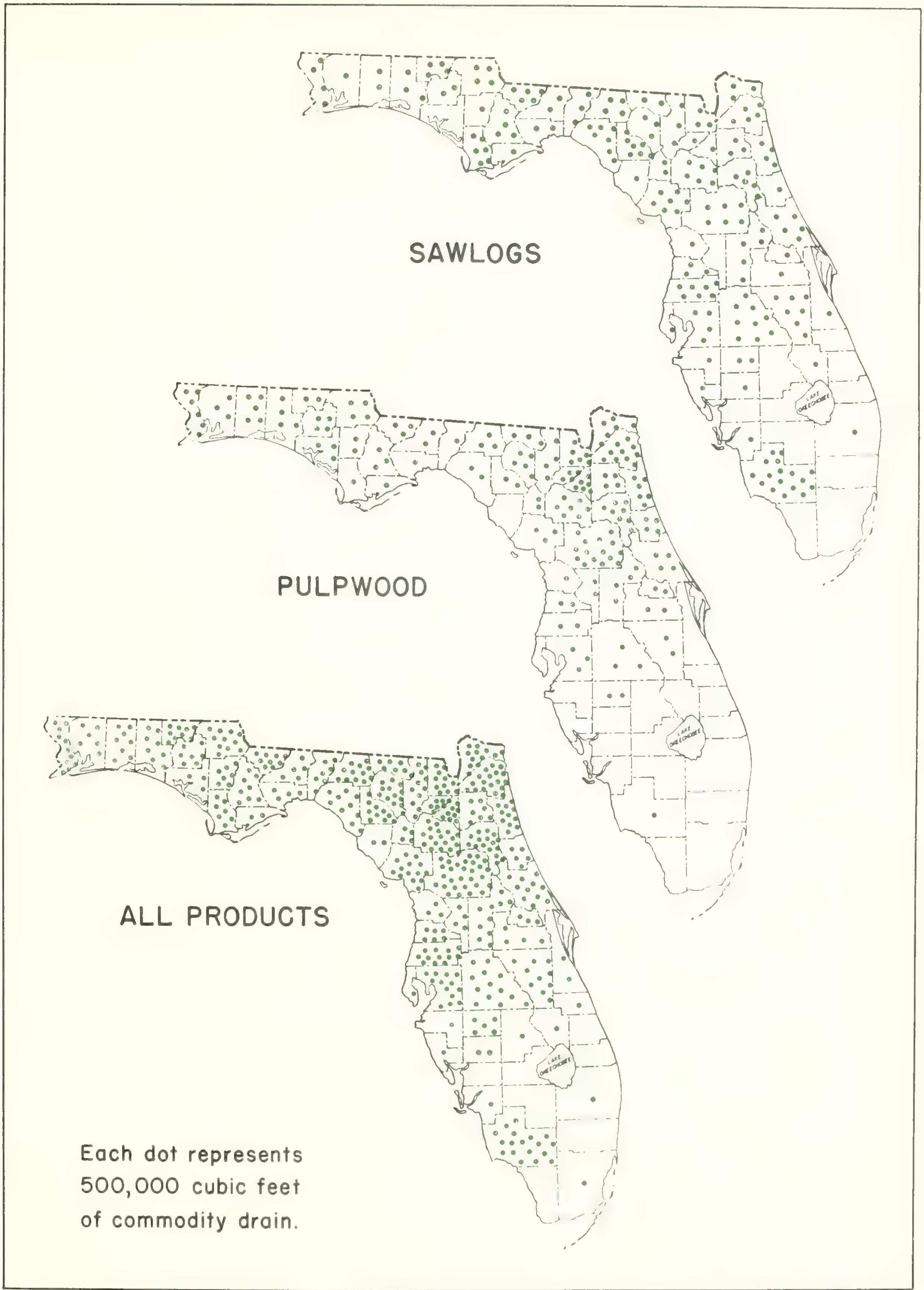


Figure 11.--Origin of sawlog, pulpwood, and total commodity drain, 1948

APPENDIX

This section contains tables on the following subjects:

Table number	Title	Page
7	Production of primary forest products, 1948	21
8	Lumber production by county, 1948	22
9	Pulpwood production by county, 1948	23
10	Distribution of commodity drain by tree-diameter class, 1948	24
11	Distribution of commodity drain in board feet by product and species group, 1948	25
12	Distribution of commodity drain in cubic feet by product and species group, 1948	25
13	Cords of commodity drain per thousand cords of sound growing stock, 1948	26
	Commodity drain of all species by county and product, 1948	
14	In board feet	27
15	In standard cords	28
	Commodity drain of pine by county and product, 1948	
16	In board feet	29
17	In standard cords	30
	Commodity drain by county and species group, 1948	
18	In board feet	31
19	In cubic feet	32
20	In standard cords	33

Table 7.--Production of primary forest products, 1948

Product	Cubic volume	Standard unit	Softwood	Hardwood	Total
	Thousand cu. ft.		Number	Number	Number
Sawlogs	88,820	M bd. ft.[1]	515,000	31,900	546,900
Veneer bolts	13,590	M bd. ft.[1]	15,450	70,750	86,200
Cooperage bolts	1,640	M bd. ft.[1]	10,450	50	10,500
Pulpwood	96,960	Standard cord	1,220,000	1,200	1,221,200
Fuel wood	28,400	Standard cord	189,900	161,800	351,700
Naval stores stumps	39,560	Ton	741,800	0	741,800
Piling	740	Linear foot	964,900	83,600	1,048,500
Poles	[illegible]	Piece	373,200	0	373,200
Posts	1,120	Piece	[illegible]	[illegible]	1,710,400
Hewn cross ties	8,340	Piece	1,279,100	[illegible]	1,402,100
Dimension bolts	710	Standard cord	7,300	1,000	8,300
Excelsior wood	30	Standard cord	300	0	300
Shingles	20	Square	1,200	0	1,200
Handle bolts	60	M bd. ft.[1]	300	100	400
Lath	120	Thousand pieces	3,700	0	3,700
Shuttle blocks	10	Standard cord	0	200	200
Farm timbers	70	M cu. ft.	60	10	70
Other[2]	500	M bd. ft.[1]	2,100	1,300	3,400
All products	286,020		--	--	--

[1] Thousands of board feet International 1/4" Rule.

[2] Other includes: cedar cants, pencil stock, ski stock, plugs for roll paper, tomato stakes, and cypress lawn furniture.

Table 8.--Lumber production by county, 1948

(In thousand board feet)

County	Softwoods	Hardwoods	Total	County	Softwoods	Hardwoods	Total
Alachua	23,222	366	23,588	Lake	3,210	5	3,215
Baker	6,254	--	6,254	Lee	2,740	--	2,740
Bay	1,406	25	1,431	Leon	6,704	1,385	8,089
Bradford	2,532	--	2,532	Levy	10,731	--	10,731
Brevard	4,129	--	4,129	Liberty	5,791	255	6,046
Broward	283	--	283	Madison	7,490	12	7,502
Calhoun	2,700	561	3,261	Manatee	5,885	210	6,095
Charlotte	1,370	--	1,370	Marion	20,659	3,076	23,735
Citrus	514	6	520	Martin	1,334	--	1,334
Clay	3,526	30	3,556	Monroe	--	--	--
Collier	15,826	--	15,826	Nassau	10,052	38	10,090
Columbia	8,727	374	9,101	Okaloosa	5,726	245	5,971
Dade	1,446	4	1,450	Okeechobee	253	--	253
De Soto	9,938	--	9,938	Orange	3,427	9	3,436
Dixie	1,665	--	1,665	Osceola	21,962	241	22,203
Duval	24,667	66	24,733	Palm Beach	687	--	687
Escambia	24,883	1,251	26,134	Pasco	17,570	40	17,610
Flagler	1,064	--	1,064	Pinellas	2,905	--	2,905
Franklin	4,270	810	5,080	Polk	24,253	298	24,551
Gadsden	12,191	6,236	18,427	Putnam	15,930	4,526	20,456
Gilchrist	10,650	132	10,782	St. Johns	2,019	--	2,019
Glades	--	--	--	St. Lucie	504	--	504
Gulf	17,244	1,693	18,937	Santa Rosa	3,297	32	3,329
Hamilton	4,975	--	4,975	Sarasota	1,062	--	1,062
Hardee	2,164	410	2,574	Seminole	1,847	50	1,897
Hendry	128	--	128	Sumter	1,418	--	1,418
Hernando	8,825	716	9,541	Suwannee	10,692	114	10,806
Highlands	626	--	626	Taylor	75,280	39	75,319
Hillsborough	23,337	40	23,377	Union	2,457	40	2,497
Holmes	7,092	910	8,002	Volusia	13,835	21	13,856
Indian River	445	--	445	Wakulla	2,593	348	2,941
Jackson	7,058	5,774	12,832	Walton	4,195	523	4,718
Jefferson	7,687	132	7,819	Washington	8,099	1,113	9,212
Lafayette	3,139	--	3,139	TOTAL	538,590	32,156	570,746

Table 9.--Pulpwood production by county, 1948

County	Cords	County	Cords
Alachua	47,833	Lake	25,036
Baker	41,859	Lee	2,064
Bay	18,361	Leon	12,836
Bradford	43,609	Levy	23,952
Brevard	3,299	Liberty	20,671
Broward	--	Madison	23,393
Calhoun	16,788	Manatee	2,176
Charlotte	72	Marion	105,404
Citrus	5,071	Martin	15
Clay	25,127	Monroe	--
Collier	[illegible]	Nassau	41,511
Columbia	28,350	Okaloosa	32,110
Dade	1,028	Okeechobee	2,557
De Soto	2,871	Orange	11,579
Dixie	3,393	Osceola	[illegible]
Duval	67,872	Palm Beach	--
Escambia	40,075	Pasco	12,538
Flagler	24,245	Pinellas	1,258
Franklin	4,830	Polk	21,707
Gadsden	19,092	Putnam	56,708
Gilchrist	11,537	St. Johns	39,797
Glades	14	St. Lucie	--
Gulf	9,951	Santa Rosa	24,060
Hamilton	23,911	Sarasota	149
Hardee	16,268	Seminole	11,623
Hendry	35	Sumter	[illegible]
Hernando	10,554	Suwannee	[illegible]
Highlands	1,692	Taylor	11,318
Hillsborough	22,131	Union	29,605
Holmes	15,546	Volusia	29,857
Indian River	2,810	Wakulla	7,805
Jackson	25,016	Walton	[illegible]
Jefferson	8,726	Washington	25,678
Lafayette	11,204	TOTAL	1,221,188

Table 10.--Distribution of commodity drain by tree-diameter class, 1948[1]

(In percent)

Tree-diameter class	Sawlogs	Pulpwood	Veneer	Poles & piling	Hewn cross ties	Fuel-wood	All products
(Inches)							
6	--	1	--	--	--	4	1
8	1	19	--	9	--	12	8
10	9	29	--	46	--	22	17
12	14	22	--	28	46	34	19
14	21	21	5	15	21	25	19
16	20	8	21	2	27	--	15
18	10	--	12	--	6	3	5
20	6	--	15	-	--	--	4
22^{+}	19	--	47	--	-	--	12
All diameters	100	100	100	100	100	100	100

[1] Volume of sound trees destroyed in logging not included.

Table 11.--Distribution of commodity drain in board feet, by product and species group, 1948

Product	Pine	Cypress and cedar	Hardwood	All species
	Percent	Percent	Percent	Percent
Sawlogs	42.5	8.9	3.5	54.9
Pulpwood	23.4	0.0	(1/)	23.4
Veneer	1.5	0.1	7.5	9.1
Hewn cross ties	4.7	0.8	0.5	6.0
Poles and piling	3.1	(1/)	0.1	3.2
Fuel wood	1.1	0.0	0.3	1.4
Other	1.6	0.2	0.2	2.0
All products	77.9	10.0	12.1	100.0

Table 12.--Distribution of commodity drain in cubic feet, by product and species group, 1948

Product	Pine	Cypress and cedar	Hardwood	All species
	Percent	Percent	Percent	Percent
Sawlogs	30.9	7.3	2.8	41.0
Pulpwood	38.1	0.0	(1/)	38.1
Veneer	1.3	0.1	7.1	8.5
Hewn cross ties	4.6	0.8	0.5	5.9
Poles and piling	3.0	(1/)	0.1	3.1
Fuel wood	1.3	0.0	0.4	1.7
Other	1.3	0.2	0.2	1.7
All products	80.5	8.4	11.1	100.0

1/ Less than one-tenth of one percent.

Table 13.--Cords of commodity drain per thousand cords of sound growing stock, 1948

County	Product			All products	
	Sawlogs	Pulpwood	Other	Pine	All species
Alachua	12	16	11	48	39
Baker	5	12	2	24	19
Bay	2	10	(1/)	16	12
Bradford	5	31	4	50	40
Brevard	14	7	2	24	23
Broward	12	--	5	7	17
Calhoun	5	12	15	52	32
Charlotte	7	(1/)	(1/)	10	7
Citrus	3	4	6	19	13
Clay	10	14	4	32	28
Collier	45	3	(1/)	58	48
Columbia	4	7	6	22	17
Dade	10	3	1	14	14
De Soto	14	6	13	63	33
Dixie	2	1	3	10	6
Duval	17	36	9	105	62
Escambia	10	18	5	36	33
Flagler	1	9	1	23	11
Franklin	4	3	(1/)	14	7
Gadsden	21	13	6	52	40
Gilchrist	17	18	5	75	40
Glades	1	(1/)	(1/)	2	1
Gulf	20	6	1	31	27
Hamilton	5	11	5	29	21
Hardee	15	22	5	72	42
Hendry	3	(1/)	(1/)	4	3
Hernando	17	9	[illegible]	82	33
Highlands			(1/)	7	4
Hillsborough	18	17	29	69	64
Holmes	14	9	11	73	34
Indian River	4	10	1	23	15
Jackson	9	9	8	48	26
Jefferson	5	3	7	25	15
Lafayette	19	5	6	41	30
Lake	19	16	6	46	41
Lee	5	3	1	22	9
Leon	4	5	3	13	12
Levy	9	5	6	35	20
Liberty	7	6	1	15	14
Madison	10	10	12	53	32
Manatee	6	4	2	15	12
Marion	11	32	15	64	58
Martin	8	(1/)	1	10	9
Monroe	(1/)	--	2	104	2
Nassau	6	15	7	41	28
Okaloosa	7	18	5	35	30
Okeechobee	9	4	(1/)	21	13
Orange	5	7	2	26	14
Osceola	28	9	1	105	38
Palm Beach	16	--	1	17	17
Pasco	39	12	16	88	67
Pinellas	32	10	1	49	43
Polk	20	8	3	49	31
Putnam	13	22	7	57	42
St. Johns	12	21	6	51	39
St. Lucie	2	--	(1/)	5	2
Santa Rosa	1	7	3	13	11
Sarasota	19	(1/)	1	21	20
Seminole	7	20	2	88	29
Sumter	2	8	7	43	17
Suwannee	17	32	32	104	81
Taylor	11	3	2	23	16
Union	5	20	5	46	30
Volusia	10	11	6	59	27
Wakulla	5	4	2	10	11
Walton	6	10	3	32	19
Washington	8	19	8	67	35
State	10	11	6	37	27

1/ Less than one-half cord commodity drain per thousand cords growing stock.

Table 14.--Commodity drain of all species, by county and product, 1948

(In thousand board feet)

County	Sawlogs	Pulpwood	Veneer bolts	Poles and piling	Hewn cross ties	Fuelwood	Other	All products
Alachua	17,866	8,611	4,830	493	4,481	516	65	36,862
Baker	9,264	7,536	286	41	1,807	108	116	19,158
Bay	1,319	3,305	--	--	--	164	--	4,788
Bradford	3,155	7,851	516	627	571	237	--	12,957
Brevard	2,980	594	--	27	167	25	--	3,793
Broward	265	--	--	5	71	12	--	353
Calhoun	3,278	3,022	4,705	--	261	247	1,691	13,204
Charlotte	806	13	--	--	--	4	--	823
Citrus	1,644	913	1,384	--	951	8	222	5,122
Clay	7,885	4,524	1,047	91	450	64	429	14,490
Collier	43,877	1,065	--	--	--	8	--	44,950
Columbia	7,564	5,104	2,334	892	4,492	301	5	20,692
Dade	1,336	185	--	36	--	44	--	1,601
De Soto	2,937	517	957	386	22	17	659	5,495
Dixie	2,191	611	115	570	1,277	43	375	5,182
Duval	14,749	12,218	2,051	302	2,505	237	194	32,256
Escambia	9,998	7,214	432	2,132	--	659	--	20,435
Flagler	1,886	4,365	--	108	1,041	43	--	7,443
Franklin	3,179	869	--	--	--	83	--	4,131
Gadsden	14,086	3,437	1,166	60	497	783	28	20,057
Gilchrist	5,045	2,077	135	135	525	129	--	8,046
Glades	102	3	--	--	51	8	--	164
Gulf	15,646	1,791	249	--	--	41	83	17,810
Hamilton	5,287	4,305	638	1,144	1,432	216	11	13,033
Hardee	5,103	2,928	895	22	--	44	310	9,302
Hendry	939	6	--	--	--	4	--	949
Hernando	9,649	1,900	1,858	--	1,016	21	182	14,626
Highlands	655	305	--	56	43	8	--	1,067
Hillsborough	10,879	3,984	11,707	17	175	182	459	27,403
Holmes	10,946	2,799	588	222	194	741	4,973	20,463
Indian River	552	506	--	--	11	25	--	1,094
Jackson	10,684	4,503	2,505	697	397	1,401	1,758	21,945
Jefferson	7,243	1,571	5,092	2	1,221	495	4	15,628
Lafayette	19,241	2,017	78	2,972	681	64	3	25,056
Lake	12,236	4,507	410	677	1,679	57	--	19,566
Lee	1,682	372	--	183	23	20	--	2,280
Leon	4,362	2,311	1,663	2	256	536	16	9,146
Levy	18,918	4,312	2,128	728	4,144	216	972	31,418
Liberty	11,113	3,721	1,457	--	134	82	--	16,507
Madison	11,128	4,211	4,536	1,295	3,094	216	--	24,480
Manatee	1,669	392	206	--	--	28	232	2,527
Marion	16,283	18,975	8,976	254	5,423	430	1,438	51,779
Martin	785	3	--	7	49	12	--	856
Monroe	4	--	--	--	32	4	--	40
Nassau	8,501	7,473	782	3,091	1,791	129	271	22,038
Okaloosa	6,267	5,780	494	871	986	453	--	14,851
Okeechobee	2,672	460	--	--	--	8	--	3,140
Orange	4,043	2,084	483	--	380	48	--	7,038
Osceola	20,188	2,510	194	--	25	17	204	23,138
Palm Beach	2,546	--	--	7	--	33	--	2,586
Pasco	18,756	2,257	5,220	143	226	36	264	26,902
Pinellas	1,982	226	--	10	--	33	--	2,251
Polk	24,235	3,908	1,424	138	209	175	264	30,353
Putnam	14,942	10,209	3,350	103	1,271	193	1,254	31,322
St. Johns	10,676	7,164	1,841	309	1,144	108	522	21,764
St. Lucie	580	--	--	--	--	8	--	588
Santa Rosa	2,104	4,331	536	2,351	--	618	8	[illegible]
Sarasota	3,205	27	--	--	--	8	155	3,395
Seminole	1,870	2,092	291	5	--	29	--	[illegible]
Sumter	1,290	2,156	2,281	--	1,003	36	--	6,766
Suwannee	8,284	5,983	303	7,333	2,334	495	3	24,735
Taylor	18,974	2,037	883	426	1,363	108	79	23,870
Union	3,295	5,330	379	--	1,577	129	77	10,787
Volusia	12,233	5,375	175	309	3,921	409	--	22,422
Wakulla	4,990	1,405	1,271	--	--	206	16	7,888
Walton	7,400	4,959	1,502	348	28	576	--	14,813
Washington	5,339	4,623	885	--	434	536	1,700	13,517
State	514,788	219,842	85,238	29,627	55,865	12,974	19,092	937,426

Table 15.--Commodity drain of all species by county and product, 1948

(In standard cords)

County	Sawlogs	Pulpwood	Veneer bolts	Poles and piling	Hewn cross ties	Fuelwood	Other	All products
Alachua	34,700	43,500	13,200	1,500	12,500	1,900	500	107,800
Baker	18,000	38,100	800	100	5,000	400	300	62,700
Bay	2,500	16,700	--	--	--	700	(1/)	19,900
Bradford	6,100	39,700	1,400	1,800	1,600	900	100	51,600
Brevard	5,700	3,000	--	100	500	100	(1/)	9,400
Broward	600	--	--	(1/)	200	(1/)	(1/)	800
Calhoun	6,500	15,300	13,000	--	700	1,000	4,200	40,700
Charlotte	1,600	100	--	--	--	(1/)	(1/)	1,700
Citrus	3,300	4,600	3,700	--	2,600	(1/)	600	14,800
Clay	[illegible]	22,900	2,800	300	1,300	300	900	44,000
Collier	95,700	5,400	--	--	--	(1/)	(1/)	101,100
Columbia	14,800	25,800	6,400	2,600	[illegible]	1,200	400	63,700
Dade	[illegible]	900	--	100	--	200	(1/)	3,800
De Soto	[illegible]	2,600	2,600	1,100	100	100	1,600	13,700
Dixie	4,300	3,100	300	1,700	3,600	100	900	14,000
Duval	28,700	61,800	5,400	900	7,000	900	500	105,200
Escambia	[illegible]	36,400	1,200	6,300	--	2,600	100	66,200
Flagler	3,700	22,100	--	300	2,900	200	(1/)	29,200
Franklin	6,200	4,400	--	--	--	300	(1/)	10,900
Gadsden	28,400	[illegible]	3,200	200	1,400	3,100	200	53,800
Gilchrist	[illegible]	10,500	400	400	[illegible]	[illegible]	(1/)	23,000
Glades	200	(1/)	--	--	200	(1/)	(1/)	400
Gulf	32,100	9,100	700	--	--	200	100	42,200
Hamilton	10,200	[illegible]	1,800	3,400	4,000	[illegible]	100	42,100
Hardee	[illegible]	14,800	2,400	100	--	100	800	28,100
Hendry	[illegible]	(1/)	--	--	--	(1/)	(1/)	1,900
Hernando	[illegible]	9,600	[illegible]	--	2,800	100	500	36,700
Highlands	[illegible]	1,500	--	200	100	(1/)	(1/)	3,100
Hillsborough	[illegible]	20,100	[illegible]	100	400	700	1,200	76,100
Holmes	[illegible]	14,200	[illegible]	600	500	3,000	10,700	52,200
Indian River	1,000	2,600	--	--	(1/)	100	(1/)	3,700
Jackson	21,600	22,800	[illegible]	2,100	1,100	5,600	4,000	64,100
Jefferson	14,000	[illegible]	14,100	(1/)	3,400	2,000	100	41,500
Lafayette	[illegible]	10,200	200	8,800	[illegible]	200	(1/)	58,400
Lake	[illegible]	22,800	1,100	2,200	4,600	200	(1/)	57,900
Lee	3,300	[illegible]	--	[illegible]	100	100	(1/)	5,900
Leon	8,500	[illegible]	4,600	(1/)	[illegible]	2,100	100	27,700
Levy	[illegible]	21,800	5,800	2,200	[illegible]	800	2,300	82,100
Liberty	[illegible]	18,800	4,100	--	[illegible]	[illegible]	(1/)	47,100
Madison	[illegible]	21,300	[illegible]	3,800	8,600	800	100	68,600
Manatee	3,200	2,000	600	--	--	100	600	6,500
Marion	[illegible]	[illegible]	23,800	800	[illegible]	1,700	3,600	[illegible]
Martin	1,500	(1/)	--	(1/)	200	(1/)	(1/)	1,700
Monroe	(1/)	--	--	--	100	(1/)	(1/)	100
Nassau	16,500	37,800	2,100	9,100	5,000	500	700	71,700
Okaloosa	12,100	29,200	1,400	2,600	2,800	1,800	(1/)	49,900
Okeechobee	[illegible]	2,300	--	--	--	(1/)	(1/)	7,500
Orange	[illegible]	10,600	[illegible]	--	1,100	200	(1/)	21,100
Osceola	[illegible]	12,700	[illegible]	--	100	100	[illegible]	53,600
Palm Beach	[illegible]	--	--	(1/)	--	200	(1/)	5,100
Pasco	[illegible]	11,400	14,200	[illegible]	600	200	600	65,400
Pinellas	[illegible]	1,200	--	(1/)	--	100	(1/)	5,200
Polk	[illegible]	19,800	3,800	[illegible]	600	600	700	74,900
Putnam	29,500	51,600	9,000	300	3,500	800	2,700	97,400
St. Johns	21,100	36,200	5,000	900	3,200	400	1,200	68,000
St. Lucie	1,100	--	--	--	--	(1/)	(1/)	1,100
Santa Rosa	4,100	[illegible]	[illegible]	6,900	--	[illegible]	100	37,000
Sarasota	6,200	100	--	--	--	(1/)	400	6,700
Seminole	3,700	10,600	800	(1/)	--	100	(1/)	15,200
Sumter	[illegible]	10,900	6,000	--	2,800	200	(1/)	22,400
Suwannee	[illegible]	30,200	800	21,700	6,500	1,900	200	77,200
Taylor	37,200	10,300	2,500	1,300	3,800	400	200	55,700
Union	[illegible]	27,000	1,000	--	4,400	500	200	39,600
Volusia	[illegible]	27,200	500	900	10,900	1,600	100	66,000
Wakulla	9,800	7,100	3,500	--	--	800	100	21,300
Walton	14,700	25,100	4,200	1,000	100	2,200	100	47,400
Washington	10,700	23,400	2,400	--	1,200	2,100	3,700	43,500
State	1,027,900	1,111,500	232,400	87,700	155,600	50,700	46,000	2,711,800

1/ Less than 50 cords.

Table 16.--Commodity drain of pine by county and product, 1948

(In thousand board feet)

County	Sawlogs	Pulpwood	Veneer bolts	Poles and piling	Hewn cross ties	Fuelwood	Other	All products
Alachua	16,907	8,610	865	493	4,297	435	46	31,653
Baker	8,927	7,536	30	41	1,156	91	116	17,897
Bay	1,287	3,305	--	--	--	124	--	4,716
Bradford	2,996	7,845	34	627	561	200	--	12,263
Brevard	2,980	594	--	27	167	24	--	3,792
Broward	78	--	--	5	25	12	--	120
Calhoun	2,620	3,022	--	--	24	187	228	6,081
Charlotte	722	13	--	--	--	4	--	739
Citrus	1,332	913	434	--	951	8	--	3,638
Clay	6,549	4,519	201	91	424	54	429	12,267
Collier	12,811	1,065	--	---	--	8	--	13,884
Columbia	6,763	5,101	212	892	3,839	254	--	17,061
Dade	1,336	185	--	36	--	43	--	1,600
De Soto	2,904	517	308	386	22	16	659	4,812
Dixie	2,028	611	--	570	89	36	--	3,334
Duval	13,993	12,218	1,054	302	2,425	200	194	30,386
Escambia	8,303	7,214	--	2,132	--	498	--	18,147
Flagler	1,614	4,365	--	108	431	36	--	6,554
Franklin	3,014	869	--	--	--	62	--	3,945
Gadsden	8,217	3,432	--	60	347	591	24	12,671
Gilchrist	4,867	2,077	--	135	478	109	--	7,666
Glades	89	3	--	--	51	8	--	151
Gulf	9,445	1,791	--	--	--	31	--	11,267
Hamilton	5,077	4,305	61	1,144	1,139	182	--	11,908
Hardee	4,668	2,926	268	22	--	43	310	8,237
Hendry	881	6	--	--	--	4	--	891
Hernando	9,015	1,900	434	--	1,016	20	14	12,399
Highlands	587	305	--	56	43	8	--	999
Hillsborough	9,878	3,984	460	17	175	177	459	15,150
Holmes	8,826	2,799	--	222	31	560	4,935	17,373
Indian River	552	506	--	--	--	24	--	1,082
Jackson	5,926	4,503	--	697	89	1,059	1,758	14,032
Jefferson	6,773	1,555	108	--	1,100	374	--	9,910
Lafayette	19,065	2,017	78	2,972	542	54	--	24,728
Lake	2,554	4,507	410	13	1,130	55	--	8,669
Lee	1,508	372	--	183	23	20	--	2,106
Leon	3,974	2,305	--	--	256	405	--	6,940
Levy	14,045	4,260	434	728	3,306	182	--	22,955
Liberty	3,918	3,718	--	--	4	62	--	7,702
Madison	10,901	4,184	210	1,295	2,527	182	--	19,299
Manatee	1,669	392	97	--	--	27	232	2,417
Marion	14,567	18,943	4,150	254	5,331	363	807	44,415
Martin	785	3	--	7	49	12	--	856
Monroe	--	--	--	--	32	4	--	36
Nassau	8,180	7,473	252	3,080	1,725	109	271	21,090
Okaloosa	5,962	5,780	--	871	836	342	--	13,791
Okeechobee	2,672	460	--	--	--	8	--	3,140
Orange	3,595	2,084	98	--	380	47	--	6,204
Osceola	17,629	2,510	39	--	25	16	28	20,247
Palm Beach	2,525	--	--	7	--	32	--	2,564
Pasco	13,454	2,257	963	143	226	35	255	17,333
Pinellas	1,915	226	--	10	--	32	--	2,183
Polk	17,575	3,908	455	131	75	170	264	22,578
Putnam	11,983	10,209	942	7	875	163	1,254	25,433
St. Johns	8,534	7,164	334	309	889	91	522	17,843
St. Lucie	580	--	--	--	--	8	--	588
Santa Rosa	1,994	4,331	--	2,351	--	467	58	9,201
Sarasota	3,202	27	--	--	--	8	155	3,392
Seminole	1,452	2,092	59	--	--	28	--	3,631
Sumter	1,190	2,156	1,245	--	1,003	35	--	5,629
Suwannee	8,261	5,955	149	7,333	1,722	417	--	23,837
Taylor	17,063	2,025	--	426	1,131	91	--	20,736
Union	2,924	5,315	33	--	861	109	77	9,319
Volusia	8,725	5,375	--	309	2,133	345	--	16,887
Wakulla	4,096	1,403	--	--	--	156	--	5,655
Walton	5,743	4,959	--	348	--	436	--	11,486
Washington	4,026	4,623	--	--	83	405	1,645	10,782
State	398,231	219,627	14,417	28,840	44,044	10,398	14,740	730,297

Table 17.--Commodity drain of pine by county and product, 1948

(In standard cords)

County	Sawlogs	Pulpwood	Veneer bolts	Poles and piling	Hewn cross ties	Fuelwood	Other	All products
Alachua	32,500	43,500	2,200	1,500	12,000	1,600	300	93,600
Baker	17,200	38,100	100	100	3,200	300	300	59,300
Bay	2,500	16,700	--	--	--	400	(1/)	19,600
Bradford	5,800	39,700	100	1,800	1,600	700	(1/)	49,700
Brevard	5,700	3,000	--	100	500	100	(1/)	9,400
Broward	100	--	--	(1/)	100	100	(1/)	300
Calhoun	5,000	15,200	--	--	100	700	600	21,600
Charlotte	1,400	100	--	--	--	(1/)	--	1,500
Citrus	2,600	4,600	1,100	--	2,700	(1/)	(1/)	11,000
Clay	12,600	22,800	500	300	1,200	200	1,000	38,600
Collier	24,700	5,400	--	--	--	(1/)	(1/)	30,100
Columbia	13,000	25,800	600	2,600	10,700	900	300	53,900
Dade	2,600	900	--	100	--	200	(1/)	3,800
De Soto	5,600	2,600	700	1,200	100	100	1,600	11,900
Dixie	3,900	3,100	--	1,700	300	100	(1/)	9,100
Duval	26,900	61,800	2,700	900	6,800	700	500	100,300
Escambia	16,000	36,500	--	6,300	--	1,800	(1/)	60,600
Flagler	3,100	22,100	--	300	1,200	200	(1/)	26,900
Franklin	5,800	4,400	--	--	--	200	(1/)	10,400
Gadsden	15,800	17,300	--	100	1,000	2,200	200	36,600
Gilchrist	9,400	10,500	--	400	1,300	400	(1/)	22,000
Glades	200	(1/)	--	--	200	(1/)	(1/)	400
Gulf	18,200	9,100	--	--	--	100	(1/)	27,400
Hamilton	9,800	21,700	100	3,400	3,100	700	100	38,900
Hardee	9,000	14,800	600	100	--	200	700	25,400
Hendry	1,700	(1/)	--	--	--	(1/)	--	1,700
Hernando	17,400	[illegible]	1,100	--	2,800	100	(1/)	31,000
Highlands	1,100	1,600	--	200	100	(1/)	(1/)	3,000
Hillsborough	19,000	20,200	1,200	100	400	600	1,100	42,600
Holmes	17,000	14,200	--	700	100	2,000	10,500	44,500
Indian River	1,000	2,600	--	--	--	100	(1/)	3,700
Jackson	11,400	22,700	--	2,100	200	3,900	3,900	44,200
Jefferson	13,000	7,900	200	--	3,100	1,400	(1/)	25,600
Lafayette	36,700	10,200	200	8,800	1,500	200	(1/)	57,600
Lake	4,900	22,800	1,100	(1/)	3,100	200	(1/)	32,100
Lee	2,900	1,900	--	500	100	100	(1/)	5,500
Leon	7,600	11,700	--	--	700	1,500	(1/)	21,500
Levy	27,000	21,500	1,100	2,200	9,200	700	(1/)	61,700
Liberty	7,600	18,800	--	--	(1/)	200	(1/)	26,600
Madison	21,000	21,200	[illegible]	3,800	7,000	700	(1/)	54,200
Manatee	3,200	2,000	[illegible]	--	--	100	600	6,200
Marion	28,000	[illegible]	[illegible]	[illegible]	14,900	1,300	2,000	153,300
Martin	1,500	(1/)	--	(1/)	100	100	(1/)	1,700
Monroe	--	--	--	--	100	(1/)	(1/)	100
Nassau	15,800	[illegible]	600	9,100	4,800	[illegible]	700	69,100
Okaloosa	11,500	[illegible]	--	2,600	[illegible]	1,300	(1/)	46,900
Okeechobee	5,200	[illegible]	--	--	--	(1/)	(1/)	7,500
Orange	6,900	[illegible]	200	--	1,000	200	100	18,900
Osceola	33,900	12,600	100	--	100	100	100	46,900
Palm Beach	4,900	--	--	(1/)	--	100	(1/)	5,000
Pasco	25,900	11,400	2,500	400	600	100	600	41,500
Pinellas	3,700	1,200	--	(1/)	--	100	(1/)	5,000
Polk	33,800	19,700	1,200	400	200	600	700	56,600
Putnam	23,100	51,600	2,400	(1/)	2,400	600	2,700	82,800
St. Johns	16,400	36,200	400	900	3,000	300	1,100	58,300
St. Lucie	1,100	--	--	--	--	(1/)	(1/)	1,100
Santa Rosa	3,800	21,900	--	6,900	--	1,700	200	34,500
Sarasota	6,100	200	--	--	--	(1/)	400	6,700
Seminole	2,800	10,600	100	--	--	100	(1/)	13,600
Sumter	2,300	10,900	3,200	--	2,800	100	(1/)	19,300
Suwannee	15,900	30,100	400	21,600	4,800	1,500	100	74,400
Taylor	32,800	10,300	--	1,300	3,200	300	(1/)	47,900
Union	5,600	26,900	100	--	2,400	400	200	35,600
Volusia	16,800	[illegible]	--	900	[illegible]	1,300	100	52,200
Wakulla	7,900	7,000	--	--	--	600	(1/)	15,500
Walton	11,100	25,100	--	1,000	--	1,600	(1/)	38,800
Washington	7,700	23,400	--	--	200	1,500	3,500	36,300
State	766,400	1,110,400	36,600	85,200	122,700	38,000	34,200	2,193,500

1/ Less than 50 cords.

Table 18.--Commodity drain by county and species group, 1948

(In thousand board feet)

County	Pine	Cypress and cedar	Hardwoods	All species
Alachua	31,653	789	4,420	36,862
Baker	17,897	988	273	19,158
Bay	4,716	6	66	4,788
Bradford	12,263	125	569	12,957
Brevard	3,792	--	1	3,793
Broward	120	233	(1/)	353
Calhoun	6,081	497	6,626	13,204
Charlotte	739	84	(1/)	823
Citrus	3,638	397	1,087	5,122
Clay	12,267	298	1,925	14,490
Collier	13,884	31,066	(1/)	44,950
Columbia	17,061	949	2,682	20,692
Dade	1,600	--	1	1,601
De Soto	4,812	57	626	5,495
Dixie	3,334	532	1,316	5,182
Duval	30,386	800	1,070	32,256
Escambia	18,147	--	2,288	20,435
Flagler	6,554	882	7	7,443
Franklin	3,945	158	28	4,131
Gadsden	12,671	--	7,386	20,057
Gilchrist	7,666	90	290	8,046
Glades	151	13	(1/)	164
Gulf	11,267	4,400	2,143	17,810
Hamilton	11,908	476	649	13,033
Hardee	8,237	6	1,059	9,302
Hendry	891	58	(1/)	949
Hernando	12,399	206	2,021	14,626
Highlands	999	68	(1/)	1,067
Hillsborough	15,150	1,081	11,172	27,403
Holmes	17,373	614	2,476	20,463
Indian River	1,082	11	1	1,094
Jackson	14,032	446	7,467	21,945
Jefferson	9,910	164	5,554	15,628
Lafayette	24,728	216	112	25,056
Lake	8,669	10,235	662	19,566
Lee	2,106	174	(1/)	2,280
Leon	6,940	29	2,177	9,146
Levy	22,955	2,518	5,945	31,418
Liberty	7,702	4,294	4,511	16,507
Madison	19,299	537	4,644	24,480
Manatee	2,417	--	110	2,527
Marion	44,415	2,032	5,332	51,779
Martin	856	--	(1/)	856
Monroe	36	--	4	40
Nassau	21,090	389	559	22,038
Okaloosa	13,791	48	1,012	14,851
Okeechobee	3,140	--	(1/)	3,140
Orange	6,204	415	419	7,038
Osceola	20,247	2,507	384	23,138
Palm Beach	2,564	21	1	2,586
Pasco	17,333	5,135	4,434	26,902
Pinellas	2,183	67	1	2,251
Polk	22,578	6,556	1,219	30,353
Putnam	25,433	1,121	4,768	31,322
St. Johns	17,843	932	2,989	21,764
St. Lucie	588	--	(1/)	588
Santa Rosa	9,201	77	720	9,998
Sarasota	3,392	3	(1/)	3,395
Seminole	3,631	371	285	4,287
Sumter	5,629	100	1,037	6,766
Suwannee	23,837	503	395	24,735
Taylor	20,736	2,102	1,032	23,870
Union	9,319	1,078	390	10,787
Volusia	16,887	5,023	512	22,422
Wakulla	5,655	185	2,048	7,888
Walton	11,486	772	2,555	14,813
Washington	10,782	684	2,051	13,517
State	730,297	93,618	113,511	937,426

1/ Less than 500 board feet.

Table 19.--Commodity drain by county and species group, 1948

(In thousand cubic feet)

County	Pine	Cypress and cedar	Hardwoods	All species
Alachua	7,994	166	1,043	9,203
Baker	4,977	227	68	5,272
Bay	1,595	1	22	1,618
Bradford	4,043	27	140	4,210
Brevard	828	(1/)	(1/)	828
Broward	25	49	(1/)	74
Calhoun	1,791	108	1,510	3,409
Charlotte	136	17	(1/)	153
Citrus	931	80	249	1,260
Clay	3,256	61	408	3,725
Collier	2,729	6,342	(1/)	9,071
Columbia	4,553	218	619	5,390
Dade	337	1	1	339
De Soto	1,034	12	146	1,192
Dixie	785	107	320	1,212
Duval	8,407	167	256	8,830
Escambia	5,053	(1/)	492	5,545
Flagler	2,186	204	3	2,393
Franklin	908	32	9	949
Gadsden	3,138	(1/)	1,511	4,649
Gilchrist	1,890	19	69	1,978
Glades	31	3	(1/)	34
Gulf	2,424	898	423	3,745
Hamilton	3,265	109	158	3,532
Hardee	2,153	2	230	2,385
Hendry	162	12	(1/)	174
Hernando	2,731	42	447	3,220
Highlands	253	14	(1/)	267
Hillsborough	3,665	224	2,614	6,503
Holmes	3,839	125	547	4,511
Indian River	309	4	(1/)	313
Jackson	3,703	91	1,637	5,431
Jefferson	2,241	35	1,308	3,584
Lafayette	5,121	46	29	5,196
Lake	2,650	2,114	172	4,936
Lee	477	35	(1/)	512
Leon	1,821	5	519	2,345
Levy	5,361	512	1,270	7,143
Liberty	2,215	880	930	4,025
Madison	4,666	132	1,089	5,887
Manatee	538	(1/)	25	563
Marion	12,744	421	1,248	14,413
Martin	160	(1/)	(1/)	160
Monroe	9	(1/)	1	10
Nassau	5,779	83	134	5,996
Okaloosa	3,907	10	249	4,166
Okeechobee	667	(1/)	(1/)	667
Orange	1,611	86	97	1,794
Osceola	4,198	511	80	4,789
Palm Beach	464	[illegible]	(1/)	469
Pasco	3,682	1,050	1,025	5,757
Pinellas	446	15	(1/)	461
Polk	4,977	1,347	272	6,596
Putnam	6,946	235	1,033	8,214
St. Johns	4,894	200	641	5,735
St. Lucie	106	(1/)	(1/)	106
Santa Rosa	2,818	16	194	3,028
Sarasota	619	1	(1/)	620
Seminole	1,123	76	64	1,263
Sumter	1,601	21	243	1,865
Suwannee	6,236	123	113	6,472
Taylor	4,288	438	244	4,970
Union	2,924	249	96	3,269
Volusia	4,424	1,090	128	5,642
Wakulla	1,344	38	459	1,841
Walton	3,237	157	585	3,979
Washington	3,019	140	478	3,637
State	186,444	19,433	25,648	231,525

1/ Less than 500 cubic feet.

Table 20.--Commodity drain by county and species group, 1948

(In standard cords)

County	Pine	Cypress and cedar	Hardwoods	All species
Alachua	93,600	1,900	12,300	107,800
Baker	59,300	2,600	800	62,700
Bay	19,600	(1/)	300	19,900
Bradford	49,700	300	1,600	51,600
Brevard	9,400	(1/)	(1/)	9,400
Broward	300	500	(1/)	800
Calhoun	21,600	1,200	17,900	40,700
Charlotte	1,500	200	(1/)	1,700
Citrus	11,000	900	2,900	14,800
Clay	38,600	700	4,700	44,000
Collier	30,100	71,000	(1/)	101,100
Columbia	53,900	2,500	7,300	63,700
Dade	3,800	(1/)	(1/)	3,800
De Soto	11,900	100	1,700	13,700
Dixie	9,100	1,200	3,700	14,000
Duval	100,300	1,900	3,000	105,200
Escambia	60,600	(1/)	5,600	66,200
Flagler	26,900	2,300	(1/)	29,200
Franklin	10,400	400	100	10,900
Gadsden	36,600	(1/)	17,200	53,800
Gilchrist	22,000	200	800	23,000
Glades	400	(1/)	(1/)	400
Gulf	27,400	10,000	4,800	42,200
Hamilton	38,900	1,300	1,900	42,100
Hardee	25,400	(1/)	2,700	28,100
Hendry	1,700	200	(1/)	1,900
Hernando	31,000	500	5,200	36,700
Highlands	3,000	100	(1/)	3,100
Hillsborough	42,600	2,600	30,900	76,100
Holmes	44,500	1,400	6,300	52,200
Indian River	3,700	(1/)	(1/)	3,700
Jackson	44,200	1,000	18,900	64,100
Jefferson	25,600	400	15,500	41,500
Lafayette	57,600	500	300	58,400
Lake	32,100	23,800	2,000	57,900
Lee	5,500	400	(1/)	5,900
Leon	21,500	100	6,100	27,700
Levy	61,700	5,800	14,600	82,100
Liberty	26,600	9,800	10,700	47,100
Madison	54,200	1,500	12,900	68,600
Manatee	6,200	(1/)	300	6,500
Marion	153,300	4,800	14,700	172,800
Martin	1,700	(1/)	(1/)	1,700
Monroe	100	(1/)	(1/)	100
Nassau	69,100	1,000	1,600	71,700
Okaloosa	46,900	100	2,900	49,900
Okeechobee	7,500	(1/)	(1/)	7,500
Orange	18,900	1,000	1,200	21,100
Osceola	46,900	5,800	900	53,600
Palm Beach	5,000	100	(1/)	5,100
Pasco	41,500	11,800	12,100	65,400
Pinellas	5,000	200	(1/)	5,200
Polk	56,600	15,100	3,200	74,900
Putnam	82,800	2,700	11,900	97,400
St. Johns	58,300	2,300	7,400	68,000
St. Lucie	1,100	(1/)	(1/)	1,100
Santa Rosa	34,500	200	2,300	37,000
Sarasota	6,700	(1/)	(1/)	6,700
Seminole	13,600	800	800	15,200
Sumter	19,300	200	2,900	22,400
Suwannee	74,400	1,400	1,400	77,200
Taylor	47,900	4,900	2,900	55,700
Union	35,600	2,800	1,200	39,600
Volusia	52,200	12,300	1,500	66,000
Wakulla	15,500	400	5,400	21,300
Walton	38,800	1,800	6,800	47,400
Washington	36,300	1,600	5,600	43,500
State	2,193,500	218,600	299,700	2,711,800

1/ Less than 50 cords.

How the Data Was Obtained

Following the completion of the forest inventory of Florida in 1949, the Southeastern Forest Experiment Station and the Florida Forest Service cooperated in a field survey to determine the volume of raw forest products used in Florida or shipped to out-of-state users in 1948. A complete canvass of sawmills and primary nonlumber plants in Florida and adjoining areas was made to obtain 1948 production of logs, bolts, and stumps. Treating plants, railroads, large utilities, and exporters were contacted for data on hewn cross ties, poles, and piling.

The 1948 production of fuel wood, fence posts, and farm timbers was estimated through an area sample. Small areas totaling approximately one percent of the area of the State were selected mechanically from the Master Sample of Agriculture, a sampling system used by the Bureau of Agricultural Economics in agricultural sampling work. A complete canvass of each area was made to determine the amount of these items produced during 1948. The data were then expanded to give county and state totals.

Additional information was needed to convert the 1948 production data to commodity drain. To obtain this, a separate study was made on a random selection of the woods operations for each of the ten leading products. The study was made on active operations in order to determine: (1) the extent of overutilization or waste, compared to Forest Survey standards, in trees cut for the various products, (2) the species, tree sizes, log diameters, and quality of material used, (3) the species, size, and quality of trees ruined in cutting and logging operations, and (4) other information such as bark thicknesses and length of bolts for use in converting the information to the different units of measure.

Reliability of the Data

Four general sources of error could affect the accuracy of the data used in the production and drain estimates. These are: (1) reporting errors, (2) canvassing errors, (3) errors in compiling data, and (4) sampling errors.

Most producers of fuel wood, fence posts, and farm timbers, as well as some small sawmills and other manufacturers, furnished estimates of production rather than actual bookkeeping records. Individual errors caused by this are not apt to be large and may tend to be compensating; but it is not possible to measure them. Enumerating work was done by men familiar with the locality who had been adequately trained to do accurate canvassing work. All records and computations were carefully checked to eliminate possible error.

Sampling errors (standard errors of estimates) are the only errors that can be evaluated. They are measures of the reliability of the estimates based on the size of the sample and individual variations within it.

The sampling error for the total cubic-foot commodity drain estimate was ± 1.8 percent. This indicates the chances are two out of three that the estimated drain was within 1.8 percent of the actual. Sampling errors shown apply only to state totals. As the totals are broken down by counties and species groups, their reliability diminishes. Detailed use of the data on a county basis is not advisable unless a number of counties are grouped together.

Sampling error in commodity drain estimates

Product	Error of cubic-foot estimates
	(Percent)
Sawlogs	2.4
Pulpwood	2.5
Veneer	5.3
Poles and piling	6.3
Hewn cross ties	16.4
Fuel wood	6.1
Other	4.4
Total drain	1.8

The sampling error was computed only for cubic-foot drain. However, the reliability would be slightly higher for board-foot drain and approximately the same for standard-cord drain.

The sampling error in the production estimate would be very low, since a complete canvass was made except in the case of fuel wood, fence posts, and farm timbers. Computation of the production estimate was mainly a matter of combining individual reports to obtain county and state totals.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia.

No. 22 - Southern Forests as a Source of Pulpwood.

No. 23 - 1946 Pulpwood Production by County in the Southeast.

No. 24 - Southern Pulpwood Production and the Timber Supply.

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina.

No. 26 - 1946 Commodity Drain by County from South Carolina Forests.

No. 27 - 1947 Pulpwood Production by County in the Southeast.

No. 28 - South Carolina's Forest Resources, 1947.

No. 29 - 1948 Pulpwood Production by County in the Southeast.

No. 30 - Forest Resources of Northeast Florida, 1949.

No. 31 - Forest Resources of Central Florida, 1949.

No. 32 - Forest Resources of Northwest Florida, 1949.

No. 33 - Forest Resources of South Florida, 1949.

USDA MISCELLANEOUS PUBLICATION

No.681 - Virginia Forest Resources and Industries, 1949.

PREFACE

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act. The Southeastern Forest Experiment Station, Asheville, North Carolina, is responsible for the work in Virginia, North Carolina, South Carolina, Georgia, and Florida. The Southern Forest Experiment Station, New Orleans, Louisiana, directs the work in Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth. Determination of the current rate of timber growth.

3. Drain. Determination of the amount of industrial and domestic wood used, and the total loss resulting from fire, insects, disease, suppression, and other causes.

4. Requirements. Determination of the current and probable future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

ACKNOWLEDGMENT

The statistics presented herein are based upon reports furnished by the wood procurement officials representing 59 mills located in, or drawing wood from the South. Reports showed either production by county or by shipping points which were used to assign production to counties. County data are approximate, but totals for small groups of counties should have little error.

CONTENTS

Page

Text - 1

Figures:

1. Pulp mills drawing wood from the South, 1949 - - - - - - - - ii.
2. Pulpwood production in the South, 1949 - - - - - - - - - - - 1
3. Pulpwood production by county in the South, 1949 - - - - - - - 27

Tables:

1. Pulpwood production in the South by state and species group, 1948 and 1949 - 2
2. Pulpwood production in the Southeastern Station territory by state and survey unit, 1949 - - - - - - - - - - - - - - - - - 3
3. Pulpwood production in the Southern Station territory by state and survey unit, 1949 - - - - - - - - - - - - - - - - - 4
4. Pulpwood production in Alabama, 1949 - - - - - - - - - - - - 5
5. Pulpwood production in Arkansas, 1949 - - - - - - - - - - - - 6
6. Pulpwood production in Florida, 1949 - - - - - - - - - - - - - 8
7. Pulpwood production in Georgia, 1949 - - - - - - - - - - - - - 10
8. Pulpwood production in Louisiana, 1949 - - - - - - - - - - - - 13
9. Pulpwood production in Oklahoma, 1949 - - - - - - - - - - - - 14
10. Pulpwood production in Mississippi, 1949 - - - - - - - - - - 15
11. Pulpwood production in North Carolina, 1949 - - - - - - - - 17
12. Pulpwood production in South Carolina, 1949 - - - - - - - - 19
13. Pulpwood production in Tennessee, 1949 - - - - - - - - - - - 20
14. Pulpwood production in Texas, 1949 - - - - - - - - - - - - - 22
15. Pulpwood production in Virginia, 1949 - - - - - - - - - - - - 23

Companies drawing pulpwood from the South, 1949 - - - - - - - - - 25

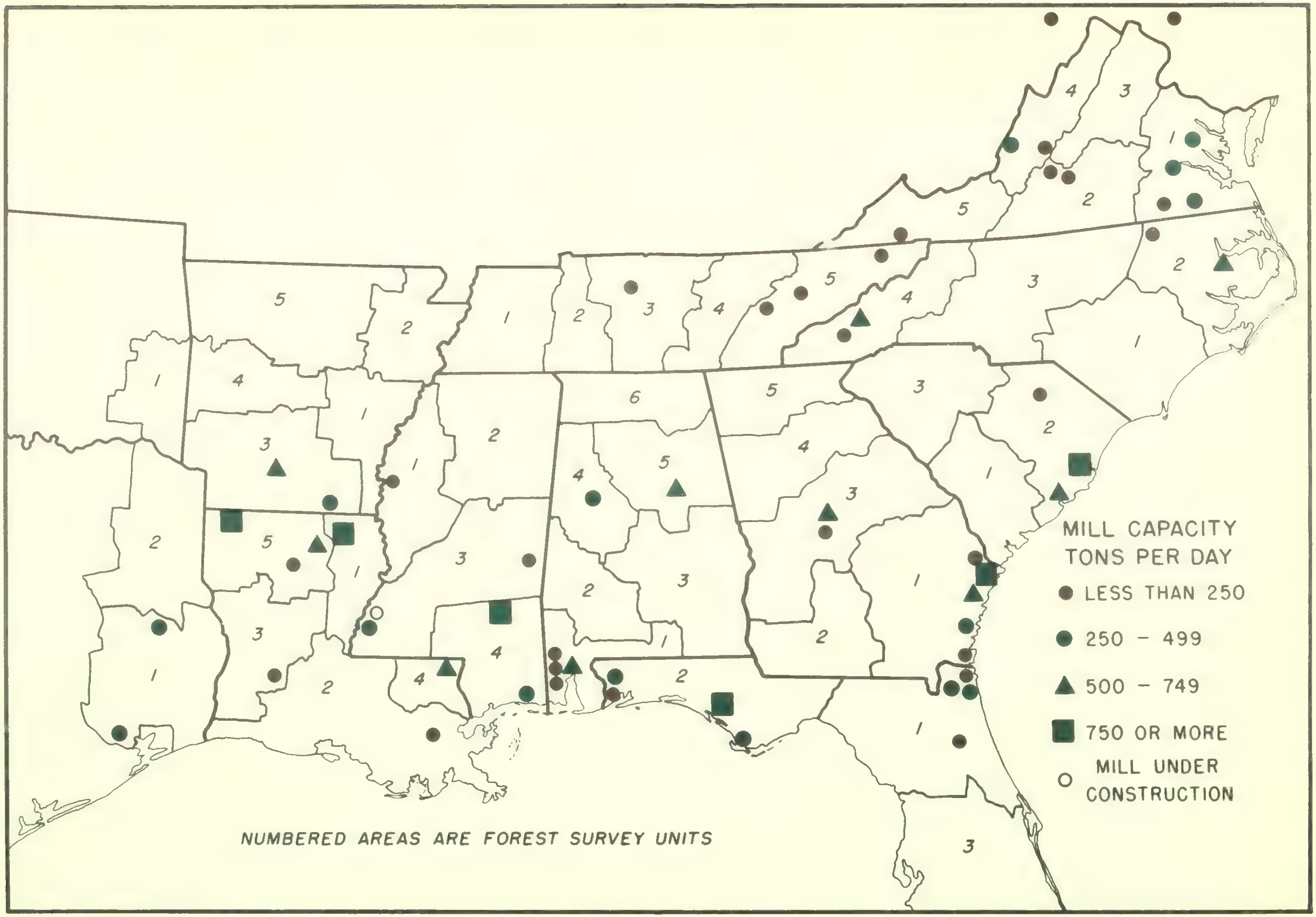


Figure 1.--Pulp mills drawing wood from the South, 1949

1949 PULPWOOD PRODUCTION IN THE SOUTH

In 1949 pulpwood production in the South was 9,923,100 cords, a decline of 12.6 percent below 1948 but 7.4 percent more than in 1947. The production of pine pulpwood was 8,944,900 cords, of hardwood 808,700 cords, and of dead chestnut 169,500 cords. Pine production was 11.3 percent below 1948, hardwood 14.5 percent less, and dead chestnut 47.8 percent less.

Total receipts of domestic pulpwood at all mills in the United States were 17,547,000 cords in 1949, indicating that the South produced close to 56 percent of all the pulpwood cut in the Nation. Among the southern states, Georgia was the largest producer and the only one, aside from Oklahoma, where production was more than in 1948. Approximately 10 percent of the Nation's pulpwood was cut in Georgia in 1949.

Production per county varied from none to nearly 130,000 cords. Over 60,000 cords were cut in each of ten counties distributed throughout the South. The three leading counties were Mobile in Alabama, Camden in Georgia, and Fairfield in South Carolina (fig. 3).

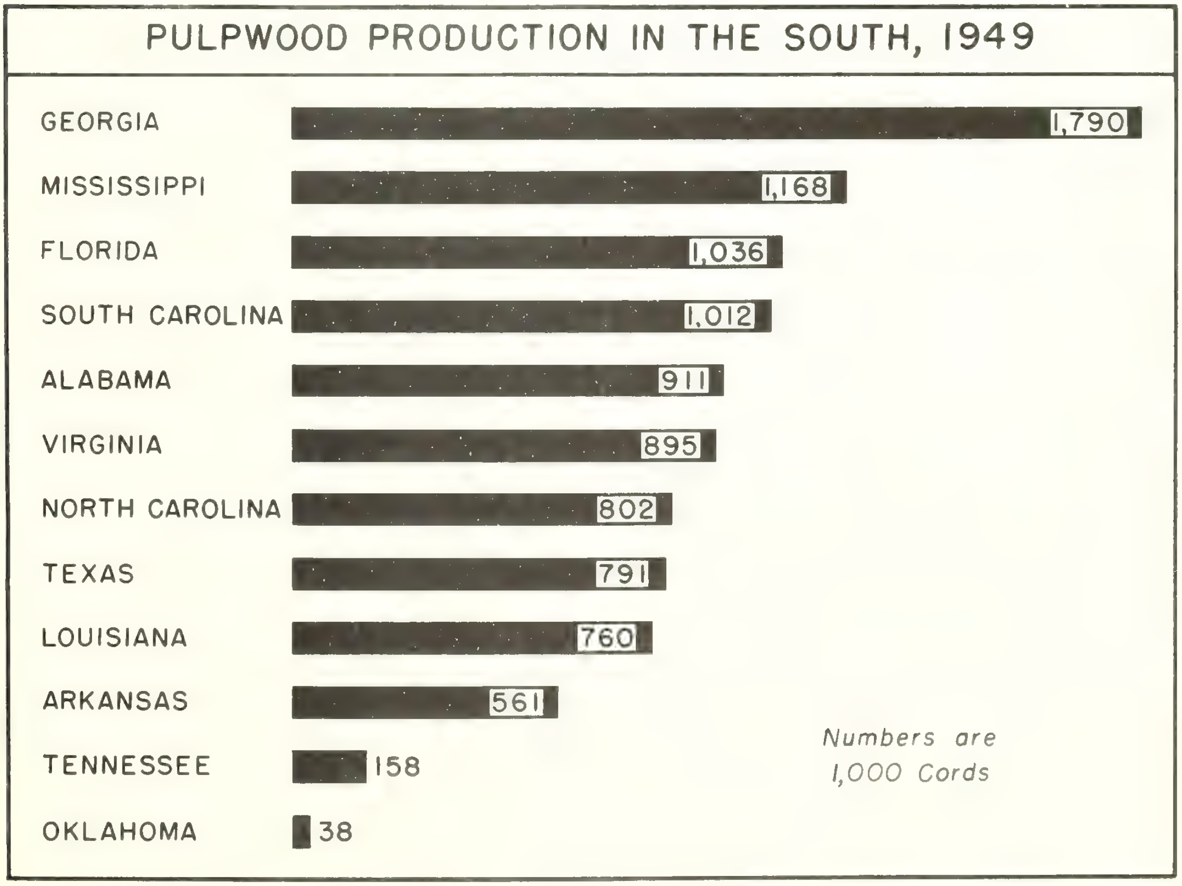


Figure 2

Table 1.--Pulpwood production in the South by state and species group, 1948 and 1949

(in thousand cords)

State	1949				1948		
	Percent change from 1948	Total	Pine	Hardwood[1]	Total	Pine	Hardwood[2]
Ala.	- 7.2	911.3	892.9	18.4	981.9	932.2	49.7
Ark.	9.0	561.3	508.2	53.1	616.7	566.9	49.8
Fla.	-15.2	1,036.1	1,034.4	1.7	1,221.2	1,220.0	1.2
Ga.	+ 1.1	1,790.5	1,668.9	121.6	1,770.6	1,644.1	126.5
La.	-20.3	759.8	726.1	33.7	953.8	910.7	43.1
Miss.	-18.6	1,167.7	1,028.2	139.5	1,433.9	1,226.6	207.3
N. C.	-13.4	802.1	620.2	181.9	926.2	674.9	251.3
Okla.	+10.5	37.9	37.8	0.1	34.3	34.2	0.1
S. C.	- 8.7	1,012.2	913.5	98.7	1,108.5	1,000.1	108.4
Tenn.	-13.0	158.1	59.7	98.4	181.7	67.7	114.0
Tex.	- 4.0	790.9	749.7	41.2	823.6	784.7	38.9
Va.	-31.5	895.2	705.3	189.9	1,306.5	1,026.1	280.4
All	-12.6	9,923.1	8,944.9	978.2	11,358.9	10,088.2	1,270.7

1/ Includes 169,500 cords of chestnut used for pulp.

2/ Includes 324,600 cords of chestnut used for pulp.

Table 2.--Pulpwood production in the Southeastern Station territory by state and survey unit, 1949

State	Forest survey unit	Species group			Total
		Pine	Hardwood	Chestnut[1]	
	Number	Std. cords	Std. cords	Std. cords	Std. cords
Virginia	[2] 1	332,150	12,518	--	344,668
	2	262,257	42,163	1,593	306,013
	3	79,384	29,675	6,974	116,033
	4	29,319	60,897	2,140	92,356
	5	2,169	10,132	23,815	36,116
	All units	705,279	155,385	34,522	895,186
North Carolina	1	252,184	11,391	--	263,575
	2	150,333	5,848	--	156,181
	3	130,251	7,330	36	137,617
	4	87,387	79,152	78,177	244,716
	All units	620,155	103,721	78,213	802,089
South Carolina	1	242,313	26,158	--	268,471
	2	381,189	47,495	--	428,684
	3	290,003	25,022	--	315,025
	All units	913,505	98,675	--	1,012,180
Georgia	1	766,651	85,732	--	852,383
	2	247,294	3,164	--	250,458
	3	443,078	8,668	--	451,746
	4	185,126	1,052	--	186,178
	5	26,753	4,361	18,607	49,721
	All units	1,668,902	102,977	18,607	1,790,486
Florida	1	627,432	1,680	--	629,112
	2	273,328	54	--	273,382
	3	123,268	--	--	123,268
	4	10,356	--	--	10,356
	All units	1,034,384	1,734	--	1,036,118
All states	-	4,942,225	462,492	131,342	5,536,059

[1] Includes only chestnut used for pulp.

[2] For location of survey units, see Figure 1.

Table 3.--Pulpwood production in the Southern Station territory by state and survey unit, 1949

State	Forest survey unit	Species group			Total
		Pine	Hardwood	Chestnut 1/	
	Number	Std. cords	Std. cords	Std. cords	Std. cords
Alabama	2/ 1	308,025	9,150	--	317,175
	2	155,998	1,095	--	157,093
	3	247,084	3,080	--	250,164
	4	114,054	4,455	--	118,509
	5	65,865	375	--	66,240
	6	1,853	287	--	2,140
	All units	892,879	18,442	--	911,321
Arkansas	1	5,292	10,900	--	16,192
	2	--	--	--	--
	3	401,198	40,453	--	441,651
	4	99,369	1,800	--	101,169
	5	2,312	--	--	2,312
	All units	508,171	53,153	--	561,324
Louisiana	1	11,077	13,100	--	24,177
	2	47,577	1,800	--	49,377
	3	172,249	2,257	--	174,506
	4	172,600	--	--	172,600
	5	322,564	16,600	--	339,164
	All units	726,067	33,757	--	759,824
Mississippi	1	13,401	27,853	--	41,254
	2	27,373	9,897	--	37,270
	3	561,240	66,442	--	627,682
	4	426,144	35,305	--	461,449
	All units	1,028,158	139,497	--	1,167,655
Oklahoma	1 and 3	37,826	100	--	37,926
Tennessee	1	--	10,835	--	10,835
	2	--	8,070	3,523	11,593
	3	17	180	5,902	6,099
	4	8,455	24,374	11,375	44,204
	5	51,203	16,758	17,367	85,328
	All units	59,675	60,217	38,167	158,059
Texas	1	462,497	26,292	--	488,789
	2	278,829	12,601	--	291,430
	3	8,389	2,285	--	10,674
	All units	749,715	41,178	--	790,893
All states	-	4,002,491	346,344	38,167	4,387,002

1/ Includes only chestnut used for pulp.

2/ For location of survey units, see Figure 1.

Table 4.--Pulpwood production in Alabama, 1949

County	Pine	Hardwood	Total
	Std. cords	Std. cords	Std. cords
Autauga	1,343	--	1,343
Baldwin	128,659	--	128,659
Barbour	9,508	--	9,508
Bibb	19,678	75	19,753
Blount	7,864	--	7,864
Bullock	19,248	--	19,248
Butler	19,410	--	19,410
Calhoun	2,009	45	2,054
Chambers	18,263	--	18,263
Cherokee	1,341	--	1,341
Chilton	6,035	1,080	7,115
Choctaw	25,220	--	25,220
Clarke	39,295	945	40,240
Clay	5,102	--	5,102
Cleburne	1,612	--	1,612
Coffee	7,576	--	7,576
Colbert	400	--	400
Conecuh	13,651	--	13,651
Coosa	4,578	--	4,578
Covington	22,916	--	22,916
Crenshaw	2,598	--	2,598
Cullman	1,139	-	1,139
Dale	2,643	--	2,643
Dallas	14,117	--	14,117
De Kalb	246	17	263
Elmore	14,422	-	14,422
Escambia	42,698	-	42,698
Etowah	4,207	--	4,207
Fayette	16,446	3,510	19,956
Franklin	100	--	100
Geneva	9,315	--	9,315
Greene	6,077	--	6,077
Hale	9,060	60	9,120
Henry	6,446	--	6,446
Houston	5,867	--	5,867
Jackson	33	--	33
Jefferson	3,966	--	3,966
Lamar	3,590	810	4,400
Lauderdale	--	--	-
Lawrence	21	270	291
Lee	24,006	--	24,006
Limestone	--	--	--
Lowndes	20,785	--	20,785
Macon	12,517	500	13,017
Madison	14	--	14
Marengo	23,499	60	23,559
Marion	1,983	--	1,983
Marshall	150	--	150

Table 4.--Alabama (cont.)

County	Pine	Hardwood	Total
	Std. cords	Std. cords	Std. cords
Mobile	69,217	1,500	70,717
Monroe	18,677	--	18,677
Montgomery	26,457	--	26,457
Morgan	889	--	889
Perry	9,099	--	9,099
Pickens	13,467	--	13,467
Pike	8,672	--	8,672
Randolph	2,878	--	2,878
Russell	10,384	1,500	11,884
St. Clair	7,973	120	8,093
Shelby	16,705	195	16,900
Sumter	15,602	--	15,602
Talladega	2,911	15	2,926
Tallapoosa	7,472	--	7,472
Tuscaloosa	34,654	-	34,654
Walker	3,403	--	3,403
Washington	44,535	7,650	52,185
Wilcox	20,054	90	20,144
Winston	177	--	177
Total	892,879	18,442	911,321

Table 5.--Pulpwood production in Arkansas, 1949

County	Pine	Hardwood	Total
	Std. cords	Std. cords	Std. cords
Arkansas	--	--	--
Ashley	40,125	7,884	48,009
Baxter	--	--	--
Benton	--	--	--
Boone	--	--	-
Bradley	31,209	400	31,609
Calhoun	15,998	400	16,398
Carroll	--	--	--
Chicot	--	2,000	2,000
Clark	19,863	2,100	21,963
Clay	--	--	--
Cleburne	--	--	--
Cleveland	14,334	--	14,334
Columbia	12,226	300	12,526
Conway	--	--	--
Craighead	--	--	--
Crawford	27	--	27
Crittenden	--	--	--
Cross	-	--	--
Dallas	21,728	3,200	24,928
Desha	--	5,100	5,100
Drew	24,994	7,000	31,994
Faulkner	--	--	--
Franklin	15	--	15
Fulton	--	--	--

Table 5.--Arkansas (cont.)

County	Pine	Hardwood	Total
	Std. cords	Std. cords	Std. cords
Garland	17,255	200	17,455
Grant	17,418	2,200	19,618
Greene	--	--	--
Hempstead	14,701	300	15,001
Hot Spring	7,549	400	7,949
Howard	8,716	600	9,316
Independence	--	--	--
Izard	100	--	100
Jackson	--	-	--
Jefferson	4,692	400	5,092
Johnson	331	--	331
Lafayette	14,114	100	14,214
Lawrence	--	--	--
Lee	--	--	--
Lincoln	600	1,400	2,000
Little River	12,972	300	13,272
Logan	1,304	--	1,304
Lonoke	--	--	--
Madison	--	--	--
Marion	100	--	100
Miller	10,028	500	10,528
Mississippi	--	--	--
Monroe	--	--	--
Montgomery	10,993	100	11,093
Nevada	8,800	1,100	9,900
Newton	--	--	--
Ouachita	52,606	7,500	60,106
Perry	15,120	200	15,320
Phillips	--	2,000	2,000
Pike	16,915	1,000	17,915
Poinsett	--	--	--
Polk	18,210	--	18,210
Pope	1,739	--	1,739
Prairie	--	--	--
Pulaski	7,801	200	8,001
Randolph	--	--	--
St. Francis	--	--	--
Saline	9,810	1,100	10,910
Scott	6,551	--	6,551
Searcy	--	--	--
Sebastian	1,298	--	1,298
Sevier	14,441	--	14,441
Sharp	--	--	--
Stone	--	--	--
Union	42,461	5,169	47,630
Van Buren	--	--	--
Washington	-	--	--
White	--	--	--
Woodruff	--	-	--
Yell	11,027	-	11,027
Total	508,171	53,153	561,324

Table 6.--Pulpwood production in Florida, 1949

County	Pine	Hardwood	Total
	Std. cords	Std. cords	Std. cords
Alachua	36,718	100	36,818
Baker	39,503	--	39,503
Bay	14,151	--	14,151
Bradford	32,584	--	32,584
Brevard	4,890	--	4,890
Broward	-	--	--
Calhoun	16,765		16,765
Charlotte	3,840	-	3,840
Citrus	5,870	-	5,870
Clay	20,619	--	20,619
Collier	--	--	--
Columbia	37,654	613	38,267
Dade	--	-	--
De Soto	1,321	--	1,321
Dixie	3,102	--	3,102
Duval	45,778	--	45,778
Escambia	43,541	--	43,541
Flagler	32,229	--	32,229
Franklin	4,235	--	4,235
Gadsden	18,930	-	18,930
Gilchrist	7,345	--	7,345
Glades	3,000	--	3,000
Gulf	7,965	--	7,965
Hamilton	33,204	--	33,204
Hardee	8,717	--	8,717
Hendry	100	--	100
Hernando	10,825	--	10,825
Highlands	3,600	--	3,600
Hillsborough	12,023	--	12,023
Holmes	14,357	--	14,357
Indian River	4,005	--	4,005
Jackson	24,617	-	24,617
Jefferson	10,659	54	10,713
Lafayette	1,420	--	1,420
Lake	11,129	--	11,129
Lee	3,416	--	3,416
Leon	10,110	--	10,110
Levy	17,641	400	18,041
Liberty	12,930	-	12,930
Madison	18,159	--	18,159
Manatee	4,840	--	4,840
Marion	63,977	500	64,477

Table 6.--Florida (cont.)

County	Pine	Hardwood	Total
	Std. cords	Std. cords	Std. cords
Martin	-	--	--
Monroe	--	--	--
Nassau	75,034	67	75,101
Okaloosa	20,478	-	20,478
Okeechobee	3,740	--	3,740
Orange	5,839	--	5,839
Osceola	1,070	--	1,070
Palm Beach	--	-	--
Pasco	12,444	--	12,444
Pinellas	616	--	616
Polk	7,482	--	7,482
Putnam	48,722	--	48,722
St. Johns	33,697	--	33,697
St. Lucie	3,740	--	3,740
Santa Rosa	27,522	--	27,522
Sarasota	399	--	399
Seminole	14,908	--	14,908
Sumter	5,810	--	5,810
Suwannee	34,669	--	34,669
Taylor	15,110	-	15,110
Union	17,042	--	17,042
Volusia	13,225	--	13,225
Wakulla	6,637	--	6,637
Walton	18,847	--	18,847
Washington	21,584	--	21,584
Total	1,034,384	1,734	1,036,118

Table 7.--Pulpwood production in Georgia, 1949

County	Pine	Hardwood	Chestnut	Total
	Std. cords	Std. cords	Std. cords	Std. cords
Appling	18,008	5,272	--	23,280
Atkinson	21,927	282	--	22,209
Bacon	5,122	497	--	5,619
Baker	-	--	--	--
Baldwin	7,084	13	--	7,097
Banks	742	--	--	742
Barrow	1,665	200	--	1,865
Bartow	916	--	--	916
Ben Hill	11,863	337	--	12,200
Berrien	7,523	687	--	8,210
Bibb	15,876	200	--	16,076
Bleckley	3,700	149	--	3,849
Brantley	14,380	6,313	--	20,693
Brooks	6,749	18	--	6,767
Bryan	58,016	1,000	--	59,016
Bulloch	30,100	800	--	30,900
Burke	9,078	668	--	9,746
Butts	4,928	200	--	5,128
Calhoun	4,487	--	--	4,487
Camden	73,351	8,844	--	82,195
Candler	9,304	427	--	9,731
Carroll	1,470	--	--	1,470
Catoosa	-	--	--	--
Charlton	34,575	1,477	--	36,052
Chatham	19,841	5,603	--	25,444
Chattahoochee	4,785	300	--	5,085
Chattooga	1,101	--	--	1,101
Cherokee	501	--	--	501
Clarke	1,248	--	--	1,248
Clay	4,184	--	--	4,184
Clayton	4,743	--	--	4,743
Clinch	34,829	355	--	35,184
Cobb	3,518	--	--	3,518
Coffee	12,664	938	--	13,602
Colquitt	15,626	411	--	16,037
Columbia	9,881	900	--	10,781
Cook	10,500	25	--	10,525
Coweta	13,594	-	--	13,594
Crawford	17,355	324	--	17,679
Crisp	7,056	55	--	7,111
Dade	68	17	--	85
Dawson	--	--	--	--
Decatur	30,486	--	--	30,486
De Kalb	1,032	--	--	1,032
Dodge	18,957	4,428	--	23,385
Dooly	2,298	--	--	2,298
Dougherty	7,977	--	--	7,977
Douglas	316	--	--	316
Early	10,304	12	--	10,316
Echols	11,550	18	--	11,568
Effingham	49,579	800	--	50,379
Elbert	8,130	15	--	8,145
Emanuel	27,893	1,963	--	29,856
Evans	5,717	427	--	6,144

Table 7.--Georgia (cont.)

County	Pine	Hardwood	Chestnut	Total
	Std. cords	Std. cords	Std. cords	Std. cords
Fannin	7,012	3,475	6,240	16,727
Fayette	2,654	--	--	2,654
Floyd	3,096	--	--	3,096
Forsyth	--	--	--	--
Franklin	1,306	24	--	1,330
Fulton	1,952	--	--	1,952
Gilmer	2,704	490	--	3,194
Glascock	100	--	--	100
Glynn	14,368	6,446	--	20,814
Gordon	3,491	--	--	3,491
Grady	14,971	12	--	14,983
Greene	21,652	1,300	--	22,952
Gwinnett	5,949	--	--	5,949
Habersham	3,256	379	--	3,635
Hall	3,627	--	--	3,627
Hancock	13,451	1,900	--	15,351
Haralson	5,187	-	--	5,187
Harris	20,431	189	--	20,620
Hart	-	--	--	--
Heard	--	--	--	--
Henry	14,238	--	--	14,238
Houston	10,949	--	--	10,949
Irwin	8,807	558	--	9,365
Jackson	7,857	--	--	7,857
Jasper	16,797	--	--	16,797
Jeff Davis	20,726	367	--	21,093
Jefferson	12,000	--	--	12,000
Jenkins	8,068	300	--	8,368
Johnson	8,572	--	--	8,572
Jones	18,391	-	--	18,391
Lamar	11,068	--	--	11,068
Lanier	10,559	159	--	10,718
Laurens	17,565	1,546	--	19,111
Lee	2,000	--	--	2,000
Liberty	31,545	1,887	--	33,432
Lincoln	700	--	--	700
Long	13,315	3,074	--	16,389
Lowndes	26,900	184	--	27,084
Lumpkin	--	--	--	--
McDuffie	4,169	--	--	4,169
McIntosh	34,680	4,302	--	38,982
Macon	3,763	--	--	3,763
Madison	7,040	100	--	7,140
Marion	6,934	-	--	6,934
Meriwether	22,306	--	--	22,306
Miller	5,143	--	--	5,143
Mitchell	9,120	31	--	9,151
Monroe	35,040	200	--	35,240
Montgomery	9,099	3,791	--	12,890
Morgan	17,365	700	--	18,065
Murray	408	--	--	408
Muscogee	4,363	100	--	4,463
Newton	17,038	55	--	17,093
Oconee	3,061	--	--	3,061

Table 7.--Georgia (cont.)

County	Pine	Hardwood	Chestnut	Total
	Std. cords	Std. cords	Std. cords	Std. cords
Oglethorpe	12,471	313	--	12,784
Paulding	387	--	--	387
Peach	4,000	--	--	4,000
Pickens	1,017	--	--	1,017
Pierce	6,193	417	--	6,610
Pike	2,890	14	--	2,904
Polk	3,251	345	--	3,596
Pulaski	2,445	100	--	2,545
Putnam	12,200	--	--	12,200
Quitman	3,093	--	--	3,093
Rabun	556	--	3,027	3,583
Randolph	4,168	200	--	4,368
Richmond	3,019	13	--	3,032
Rockdale	1,697	--	--	1,697
Schley	2,100	--	--	2,100
Screven	26,716	2,430	--	29,146
Seminole	3,204	--	--	3,204
Spalding	10,958	--	--	10,958
Stephens	1,576	--	--	1,576
Stewart	13,571	200	--	13,771
Sumter	7,238	--	--	7,238
Talbot	18,668	388	--	19,056
Taliaferro	6,123	200	--	6,323
Tattnall	18,782	300	--	19,082
Taylor	5,352	49	--	5,401
Telfair	12,684	5,512	--	18,196
Terrell	200	--	--	200
Thomas	22,617	49	--	22,666
Tift	12,287	270	--	12,557
Toombs	17,296	3,085	-	20,381
Towns	--	--	--	--
Treutlen	16,561	1,414	--	17,975
Troup	22,703	-	--	22,703
Turner	4,346	--	--	4,346
Twiggs	18,183	--	--	18,183
Union	--	--	9,340	9,340
Upson	12,551	121	--	12,672
Walker	818	--	--	818
Walton	4,986	--	--	4,986
Ware	24,331	270	--	24,601
Warren	1,406	40	--	1,446
Washington	12,403	--	--	12,403
Wayne	28,677	8,812	--	37,489
Webster	3,792	--	--	3,792
Wheeler	11,660	2,335	--	13,995
White	-	-	--	--
Whitfield	233	--	--	233
Wilcox	13,518	135	--	13,653
Wilkes	8,880	200	--	9,080
Wilkinson	12,288	--	--	12,288
Worth	13,417	221	--	13,638
Total	1,668,902	102,977	18,607	1,790,486

Table 8.--Pulpwood production in Louisiana, 1949

Parish	Pine	Hardwood	Total
	Std. cords	Std. cords	Std. cords
Acadia	4,335	--	4,335
Allen	22,316	1,400	23,716
Ascension	1,984	--	1,984
Assumption	--	--	--
Avoyelles	--	--	--
Beauregard	9,793	457	10,250
Bienville	41,082	600	41,682
Bossier	19,643	100	19,743
Caddo	16,490	--	16,490
Calcasien	14,749	--	14,749
Caldwell	8,917	--	8,917
Cameron	-	-	--
Catahoula	--	--	--
Claiborne	22,094	--	22,094
Concordia	--	--	--
De Soto	22,402	--	22,402
East Baton Rouge	1,481	400	1,881
East Carroll	--	6,100	6,100
East Feliciana	16,173	1,000	17,173
Evangeline	11,047	100	11,147
Franklin	347	--	347
Grant	22,167	--	22,167
Iberia	--	--	--
Iberville	--	--	--
Jackson	40,699	1,300	41,999
Jefferson	--	--	--
Jefferson Davis	7,363	100	7,463
Lafayette	-	--	--
Lafourche	--	--	--
La Salle	14,500	--	14,500
Lincoln	18,143	700	18,843
Livingston	55,949	--	55,949
Madison	--	3,100	3,100
Morehouse	9,819	3,300	13,119
Natchitoches	19,520	100	19,620
Orleans	--	--	--
Ouachita	16,710	200	16,910
Plaquemines	--	--	--
Pointe Coupee	--	--	--
Rapides	31,356	200	31,556
Red River	4,560	--	4,560
Richland	811	--	811
Sabine	18,312	--	18,312
St. Bernard	--	--	--
St. Charles	--	--	-
St. Helena	7,053	--	7,053
St. James	-	-	--
St. John the Baptist	--	--	--

Table 8.--Louisiana (cont.)

Parish	Pine	Hardwood	Total
	Std. cords	Std. cords	Std. cords
St. Landry	1,745	--	1,745
St. Martin	--	100	100
St. Mary	--	--	--
St. Tammany	20,452	--	20,452
Tangipahoa	49,088	--	49,088
Tensas	--	--	--
Terrebonne	--	--	--
Union	44,249	12,700	56,949
Vermilion	--	--	--
Vernon	19,536	100	19,636
Washington	40,058	--	40,058
Webster	15,016	100	15,116
West Baton Rouge	--	--	--
West Carroll	100	600	700
West Feliciana	3,449	100	3,549
Winn	52,559	900	53,459
Total	726,067	33,757	759,824

Table 9.--Pulpwood production in Oklahoma, 1949

County[1]	Pine	Hardwood	Total
	Std. cords	Std. cords	Std. cords
Choctaw	4,700	--	4,700
Latimer	3,400	--	3,400
Le Flore	14,426	--	14,426
McCurtain	9,100	100	9,200
Pushmataha	6,200	--	6,200
Total	37,826	100	37,926

[1] Counties with no pulpwood production are omitted.

Table 10.--Pulpwood production in Mississippi, 1949

County	Pine	Hardwood	Total
	Std. cords	Std. cords	Std. cords
Adams	3,384	528	3,912
Alcorn	200	2,490	2,690
Amite	18,515	519	19,034
Attala	31,977	8,000	39,977
Benton	--	--	--
Bolivar	--	5,000	5,000
Calhoun	--	--	--
Carroll	900	--	900
Chickasaw	900	--	900
Choctaw	7,589	2,313	9,902
Claiborne	5,069	893	5,962
Clarke	23,255	2,074	25,329
Clay	100	100	200
Coahoma	--	--	--
Copiah	37,165	4,994	42,159
Covington	18,901	4,313	23,214
De Soto	--	--	--
Forrest	28,824	2,870	31,694
Franklin	41,317	2,974	44,291
George	11,784	1,223	13,007
Greene	25,770	1,645	27,415
Grenada	5,605	400	6,005
Hancock	34,178	--	34,178
Harrison	25,473	1,369	26,842
Hinds	14,659	2,478	17,137
Holmes	10,121	1,260	11,381
Humphreys	--	--	--
Issaquena	2,877	4,959	7,836
Itawamba	--	--	--
Jackson	54,125	154	54,279
Jasper	46,272	4,666	50,938
Jefferson	13,504	1,818	15.322
Jefferson Davis	15,857	2,352	18,209
Jones	31,759	3,874	35,633
Kemper	16,249	173	16,422
Lafayette	--	--	--
Lamar	18,959	3,200	22,159
Lauderdale	35,152	1,707	36,859
Lawrence	30,319	3,649	33,968
Leake	18,979	1,904	20,883
Lee	--	--	--
Leflore	--	--	--

Table 10.--Mississippi (cont.)

County	Pine	Hardwood	Total
	Std. cords	Std. cords	Std. cords
Lincoln	35,499	7,689	43,188
Lowndes	305	78	383
Madison	7,340	100	7,440
Marion	42,625	1,633	44,258
Marshall	--	--	--
Monroe	--	--	--
Montgomery	4,000	600	4,600
Neshoba	15,169	1,148	16,317
Newton	23,380	4,414	27,794
Noxubee	5,344	599	5,943
Oktibbeha	5,525	638	6,163
Panola	--	--	--
Pearl River	25,065	2,493	27,558
Perry	16,596	3,288	19,884
Pike	31,215	4,136	35,351
Pontotoc	--	--	--
Prentiss	--	--	--
Quitman	--	--	--
Rankin	40,356	3,717	44,073
Scott	41,800	5,376	47,176
Sharkey	103	1,034	1,137
Simpson	28,733	3,039	31,772
Smith	9,304	1,063	10,367
Stone	17,905	679	18,584
Sunflower	--	--	--
Tallahatchie	--	--	--
Tate	--	--	--
Tippah	-	--	--
Tishomingo	564	3,150	3,714
Tunica	--	1,000	1,000
Union	--	--	--
Walthall	12,807	814	13,621
Warren	--	4,000	4,000
Washington	--	10,000	10,000
Wayne	15,197	1,749	16,946
Webster	1,585	28	1,613
Wilkinson	8,031	1,733	9,764
Winston	9,572	700	10,272
Yalobusha	100	100	200
Yazoo	300	600	900
Total	1,028,158	139,497	1,167,655

Table 11.--Pulpwood production in North Carolina, 1949

County	Pine	Hardwood	Chestnut	Total
	Std. cords	Std. cords	Std. cords	Std. cords
Alamance	2,754	--	--	2,754
Alexander	2,755	16	19	2,790
Alleghany	--	--	--	--
Anson	2,647	254	--	2,901
Ashe	--	5,385	3,041	8,426
Avery	--	480	820	1,300
Beaufort	15,336	180	--	15,516
Bertie	10,012	1,395	-	11,407
Bladen	34,075	1,781	--	35,856
Brunswick	50,054	4,000	--	54,054
Buncombe	7,597	2,441	1,840	11,878
Burke	15,482	3,035	-	18,517
Cabarrus	156	151	--	307
Caldwell	3,575	--	108	3,683
Camden	31	--	--	31
Carteret	21,553	400	--	21,953
Caswell	--	--	--	--
Catawba	3,830	48	--	3,878
Chatham	11,578	--	--	11,578
Cherokee	15,779	14,937	4,603	35,319
Chowan	95	--	--	95
Clay	4,632	2,476	10,444	17,552
Cleveland	918	60	--	978
Columbus	14,404	526	--	14,930
Craven	14,762	454	--	15,216
Cumberland	5,513	55	--	5,568
Currituck	--	--	--	--
Dare	--	--	--	--
Davidson	-	--	--	--
Davie	-	--	--	--
Duplin	7,460	524	--	7,984
Durham	2,904	--	--	2,904
Edgecombe	249	-	--	249
Forsyth	--	--	--	--
Franklin	6,639	100	-	6,739
Gaston	2,958	16	--	2,974
Gates	17,008	1,296	-	18,304
Graham	703	1,961	3,216	5,880
Granville	2,338	--	--	2,338
Greene	669	-	--	669
Guilford	306	-	--	306
Halifax	18,200	930	-	19,130
Harnett	1,861	285	--	2,146
Haywood	--	--	--	--
Henderson	3,105	1,637	54	4,796
Hertford	16,519	11	--	16,530
Hoke	3,324	--	--	3,324
Hyde	91	--	--	91
Iredell	1,574	155	--	1,729
Jackson	1,041	11,087	19,715	31,843
Johnston	5,994	56	--	6,050

Table 11.--North Carolina (cont.)

County	Pine	Hardwood	Chestnut	Total
	Std. cords	Std. cords	Std. cords	Std. cords
Jones	1,817	87	--	1,904
Lee	2,498	--	--	2,498
Lenoir	6,578	55	--	6,633
Lincoln	405	--	--	405
McDowell	5,223	4,457	1,320	11,000
Macon	971	849	9,178	10,998
Madison	2,703	4,427	3,009	10,139
Martin	1,456	34	--	1,490
Mecklenburg	13,214	135	--	13,349
Mitchell	609	5,321	3,242	9,172
Montgomery	4,996	488	--	5,484
Moore	11,180	58	--	11,238
Nash	667	--	--	667
New Hanover	7,910	675	--	8,585
Northampton	29,162	1,023	--	30,185
Onslow	37,340	1,012	--	38,352
Orange	1,440	43	--	1,483
Pamlico	1,650	76	--	1,726
Pasquotank	--	--	--	--
Pender	20,956	1,295	--	22,251
Perquimans	271	--	--	271
Person	--	--	--	--
Pitt	2,256	-	--	2,256
Polk	804	444	--	1,248
Randolph	--	-	--	--
Richmond	8,478	209	-	8,687
Robeson	12,353	468	-	12,821
Rockingham	2,701	--	--	2,701
Rowan	83	19	--	102
Rutherford	4,708	1,905	--	6,613
Sampson	9,137	218	--	9,355
Scotland	4,642	30	--	4,672
Stanly	2,266	48	--	2,314
Stokes	17	--	--	17
Surry	474	47	--	521
Swain	7,677	10,403	9,495	27,575
Transylvania	2,987	7,103	5,047	15,137
Tyrrell	--	--	--	--
Union	3,550	546	--	4,096
Vance	3,240	37	--	3,277
Wake	19,467	300	--	19,767
Warren	31,150	2,474	--	33,624
Washington	961	49	--	1,010
Watauga	--	--	--	--
Wayne	5,941	57	--	5,998
Wilkes	15,303	400	1,273	16,976
Wilson	54	-	--	54
Yadkin	379	44	17	440
Yancey	--	2,753	1,772	4,525
Total	620,155	103,721	78,213	802,089

Table 12.--Pulpwood production in South Carolina, 1949

County	Pine	Hardwoods	Total
	Std. cords	Std. cords	Std. cords
Abbeville	4,703	700	5,403
Aiken	20,369	572	20,941
Allendale	17,930	3,913	21,843
Anderson	1,152	--	1,152
Bamberg	8,939	3,164	12,103
Barnwell	8,573	815	9,388
Beaufort	20,993	1,000	21,993
Berkeley	62,787	4,535	67,322
Calhoun	9,558	800	10,358
Charleston	37,658	400	38,058
Cherokee	2,122	314	2,436
Chester	17,598	3,099	20,697
Chesterfield	7,891	7,694	15,585
Clarendon	17,479	2,743	20,222
Colleton	34,555	3,295	37,850
Darlington	13,051	3,896	16,947
Dillon	1,462	59	1,521
Dorchester	40,567	1,519	42,086
Edgefield	24,393	1,391	25,784
Fairfield	66,669	9,912	76,581
Florence	17,140	200	17,340
Georgetown	47,550	6,000	53,550
Greenville	6,421	232	6,653
Greenwood	19,528	628	20,156
Hampton	31,154	3,983	35,137
Horry	49,632	2,601	52,233
Jasper	16,390	1,389	17,779
Kershaw	36,488	4,820	41,308
Lancaster	6,884	630	7,514
Laurens	10,569	600	11,169
Lee	4,721	2,003	6,724
Lexington	15,747	2,296	18,043
McCormick	47,479	817	48,296
Marion	2,389	2,401	4,790
Marlboro	2,399	573	2,972
Newberry	42,356	2,991	45,347
Oconee	840	40	880
Orangeburg	17,538	3,412	20,950
Pickens	228	49	277
Richland	38,064	4,665	42,729
Saluda	4,776	65	4,841
Spartanburg	9,824	892	10,716
Sumter	13,806	668	14,474
Union	19,195	2,462	21,657
Williamsburg	28,672	4,237	32,909
York	5,266	200	5,466
Total	913,505	98,675	1,012,180

Table 13.--Pulpwood production in Tennessee, 1949

County	Pine	Hardwood	Chestnut	Total
	Std. cords	Std. cords	Std. cords	Std. cords
Anderson	378	14	34	426
Bedford	--	--	715	715
Benton	--	1,590	--	1,590
Bledsoe	532	--	--	532
Blount	1,852	162	16	2,030
Bradley	3,797	33	--	3,830
Campbell	--	--	98	98
Cannon	--	--	--	--
Carroll	--	2,925	--	2,925
Carter	--	420	1,502	1,922
Cheatham	17	--	--	17
Chester	--	--	--	--
Claiborne	451	754	790	1,995
Clay	--	--	13	13
Cocke	4,656	2,079	5,640	12,375
Coffee	--	90	2,847	2,937
Crockett	--	--	--	--
Cumberland	6,973	12,307	216	19,496
Davidson	--	--	--	--
Decatur	--	--	--	--
De Kalb		--	65	65
Dickson	--	90	13	103
Dyer	--	--	--	--
Fayette	--	--	--	--
Fentress	--	3,000	1,884	4,884
Franklin	18	--	--	18
Gibson	--	--	--	--
Giles	--	--	39	39
Grainger	15	87	42	144
Greene	108	--	104	212
Grundy	320	--	--	320
Hamblen	--	--	--	--
Hamilton	93	39	--	132
Hancock	--	--	--	--
Hardeman	--	330	--	330
Hardin	--	--	--	--
Hawkins	48	780	409	1,237
Haywood	--	--	--	--
Henderson	--	960	--	960
Henry	--	1,335	--	1,335
Hickman	--	450	559	1,009
Houston	--	--	481	481
Humphreys	--	--	169	169
Jackson	--	--	--	--
Jefferson	--	--	--	--
Johnson	--	240	2,597	2,837
Knox	142	439	125	706
Lake	--	--	--	--
Lauderdale	--	--	--	--

Table 13.--Tennessee (cont.)

County	Pine	Hardwood	Chestnut	Total
	Std. cords	Std. cords	Std. cords	Std. cords
Lawrence	-	4,725	2,041	6,766
Lewis	--	1,305	273	1,578
Lincoln	--	--	--	--
Loudon	175	-	16	191
McMinn	13,381	817	53	14,251
McNairy	--	--	--	--
Macon	--	--	273	273
Madison	--	165	--	165
Marion	--	--	--	--
Marshall	--	--	13	13
Maury	-	--	13	13
Meigs	-	--	--	--
Monroe	18,640	722	--	19,362
Montgomery	--	--	--	--
Moore	--	--	--	--
Morgan	77	126	--	203
Obion	--	--	--	--
Overton	329	1,054	15	1,398
Perry	--	--	--	--
Pickett	--	--	81	81
Polk	5,583	3,140	255	8,978
Putnam	15	4,785	5,493	10,293
Rhea	618	31	1,768	2,417
Roane	1,222	4,612	607	6,441
Robertson	--	--	26	26
Rutherford	--	-	182	182
Scott	60	1,542	--	1,602
Sequatchie	131	-	--	131
Sevier	--	219	374	593
Shelby	--	5,000	--	5,000
Smith	--	--	39	39
Stewart	--	-	--	--
Sullivan	--	660	133	793
Sumner	--	--	1,664	1,664
Tipton	--	-	--	--
Trousdale	--	--	--	--
Unicoi	--	607	2,484	3,091
Union	28	615	332	975
Van Buren	--	--	--	--
Warren	--	1,290	533	1,823
Washington	16	288	86	390
Wayne	--	--	--	--
Weakley	--	120	--	120
White	--	270	3,055	3,325
Williamson	--	--	--	--
Wilson	--	--	--	--
Total	59,675	60,217	38,167	158,059

Table 14.--Pulpwood production in Texas, 1949

County[1]	Pine	Hardwood	Total
	Std. cords	Std. cords	Std. cords
Anderson	21,922	2,617	24,539
Angelina	35,078	--	35,078
Bastrop	--	249	249
Bowie	12,649	100	12,749
Caldwell	-	83	83
Camp	4,200	--	4,200
Cass	26,065	--	26,065
Chambers	10	--	10
Cherokee	51,227	2,949	54,176
Fayette	--	125	125
Franklin	841	--	841
Gregg	11,337	374	11,711
Grimes	7,215	83	7,298
Hardin	15,659	83	15,742
Harris	9,179	457	9,636
Harrison	9,007	--	9,007
Henderson	700	--	700
Houston	45,745	2,160	47,905
Jasper	33,480	5,400	38,880
Jefferson	3,769	--	3,769
Lee	--	1,703	1,703
Leon	--	42	42
Liberty	26,288	2,160	28,448
Marion	16,849	--	16,849
Montgomery	63,259	1,329	64,588
Morris	4,600	--	4,600
Nacogdoches	40,307	3,281	43,588
Newton	24,695	1,703	26,398
Orange	10,657	--	10,657
Panola	9,703	166	9,869
Polk	30,882	5,856	36,738
Rusk	14,851	1,744	16,595
Sabine	20,771	457	21,228
San Augustine	36,169	42	36,211
San Jacinto	21,556	706	22,262
Shelby	22,291	955	23,246
Smith	6,896	415	7,311
Titus	2,560	--	2,560
Trinity	41,158	1,495	42,653
Tyler	18,304	332	18,636
Upshur	11,535	--	11,535
Walker	25,848	4,112	29,960
Waller	464	--	464
Wood	11,989	--	11,989
Total	749,715	41,178	790,893

[1] Counties with no pulpwood production are omitted.

Table 15.--Pulpwood production in Virginia, 1949

County	Pine	Hardwood	Chestnut	Total
	Std. cords	Std. cords	Std. cords	Std. cords
Accomac	11,789	--	--	11,789
Albemarle	14,593	3,418	716	18,727
Alleghany	3,618	20,599	615	24,832
Amelia	30,255	1,810	--	32,065
Amherst	14,091	12,372	3,314	29,777
Appomattox	6,656	1,182	--	7,838
Arlington	--	--	--	--
Augusta	932	1,352	36	2,320
Bath	2,179	12,420	18	14,617
Bedford	13,697	7,141	1,289	22,127
Bland	--	--	--	--
Botetourt	4,633	7,702	317	12,652
Brunswick	48,816	4,238	--	53,054
Buchanan	--	-	--	--
Buckingham	39,527	22,637	88	62,252
Campbell	15,806	2,033	48	17,887
Caroline	1,960	20	--	1,980
Carroll	-	--	965	965
Charles City	20,455	78	--	20,533
Charlotte	20,803	481	--	21,284
Chesterfield	10,153	422	--	10,575
Clarke	142	11	--	153
Craig	3,112	8,865	752	12,729
Culpeper	5,921	604	527	7,052
Cumberland	26,970	814	--	27,784
Dickenson	--	--	--	--
Dinwiddie	15,437	550	--	15,987
Elizabeth City	--	--	--	--
Essex	5,724	--	--	5,724
Fairfax	722	104	--	826
Fauquier	792	161	15	968
Floyd	--	--	1,357	1,357
Fluvanna	8,667	2,847	--	11,514
Franklin	8,717	640	146	9,503
Frederick	6,173	454	--	6,627
Giles	67	23	57	147
Gloucester	11,332		--	11,332
Goochland	9,382	698	--	10,080
Grayson	112	2,673	4,545	7,330
Greene	369	--	200	569
Greensville	35,713	1,911	--	37,624
Halifax	805	--	--	805
Hanover	2,307	33	--	2,340
Henrico	3,692	19	--	3,711
Henry	5,017	--	--	5,017
Highland	211	2,543	--	2,754
Isle of Wight	13,167	561	--	13,728
James City	6,593	--	--	6,593
King and Queen	16,382	--	--	16,382
King George	510	135	--	645

Table 15.--Virginia (cont.)

County	Pine	Hardwood	Chestnut	Total
	Std. cords	Std. cords	Std. cords	Std. cords
King William	14,030	--	--	14,030
Lancaster	7,494	--	--	7,494
Lee	-	1,451	4,065	5,516
Loudoun	--	4	--	4
Louisa	3,078	1,606	--	4,684
Lunenburg	9,467	135	--	9,602
Madison	139	74	--	213
Mathews	924	--	--	924
Mecklenburg	15,039	863	--	15,902
Middlesex	6,539	--	--	6,539
Montgomery	1,694	1,840	246	3,780
Nansemond	8,723	1,028	--	9,751
Nelson	14,652	7,444	1,723	23,819
New Kent	15,680	860	--	16,540
Norfolk	944	10	--	954
Northampton	1,045	--	--	1,045
Northumberland	2,139	--	--	2,139
Nottoway	12,833	703	--	13,536
Orange	3,088	60	479	3,627
Page	765	82	--	847
Patrick	--	--	--	--
Pittsylvania	18,407	366	22	18,795
Powhatan	12,508	470	--	12,978
Prince Edward	25,750	2,888	--	28,638
Prince George	11,556	373	--	11,929
Prince William	363	--	--	363
Princess Anne	--	--	-	--
Pulaski	115	75	452	642
Rappahannock	15	--	--	15
Richmond	7,298	-	--	7,298
Roanoke	149	50	17	216
Rockbridge	5,740	6,502	385	12,627
Rockingham	73	25	-	98
Russell	--	48	--	48
Scott	--	1,451	5,307	6,758
Shenandoah	291		--	291
Smyth	-	83	870	953
Southampton	18,148	1,498	--	19,646
Spotsylvania	2,331	84	--	2,415
Stafford	1,181	199	--	1,380
Surry	10,943	107	--	11,050
Sussex	13,919	548	--	14,467
Tazewell	--	5	--	5
Warren	1,301	292	--	1,593
Warwick	1,970	127	--	2,097
Washington	-	2,163	2,213	4,376
Westmoreland	1,811	--	--	1,811
Wise	--	257	3,512	3,769
Wythe	181	63	226	470
York	4,957	--	--	4,957
Total	705,279	155,385	34,522	895,186

COMPANIES DRAWING PULPWOOD FROM THE SOUTH, 1949

State	Name	Plant location	Pulp capacity 24 hrs.[1]
			1,000 lbs.
ALABAMA	Gulf States Paper Corp.	Tuscaloosa	800
	Hollingsworth & Whitney Co.	Mobile	450
	International Paper Co.	Mobile	1,070
	Mobile Paper Mill Co.	Crichton	120
	National Gypsum Co.	Mobile	300
	Coosa River Newsprint Co.	Coosa Pines	1,028
ARKANSAS	Crossett Paper Mills	Crossett	620
	International Paper Co.	Camden	1,006
FLORIDA	Armstrong Cork Co.	Pensacola	[2]
	Container Corp. of America	Fernandina	400
	Hudson Pulp & Paper Corp.	Palatka	400
	International Paper Co.	Panama City	2,568
	National Container Corp.	Jacksonville	750
	Rayonier, Inc.	Fernandina	500
	St. Joe Paper Co.	Port St. Joe	800
	St. Regis Paper Co.	Pensacola	950
GEORGIA	Armstrong Cork Co.	Macon	400
	Brunswick Pulp & Paper Co.	Brunswick	600
	Certain-teed Products Corp.	Savannah	[2]
	Macon Kraft Co.	Macon	1,200
	St. Marys Kraft Corp.	St. Marys	320
	Southern Paperboard Corp.	Savannah	500
	Union Bag & Paper Corp.	Savannah	2,320
LOUISIANA	The Brown Paper Mill Co., Inc.	West Monroe	1,100
	Calcasien Paper Co., Inc.	Elizabeth	120
	Flintkote Co.	New Orleans	250
	Gaylord Container Corp.	Bogalusa	1,444
	International Paper Co.	Bastrop	1,961
	International Paper Co.	Spring Hill	2,420
	Southern Advance Bag & Paper Co.	Hodge	600
MARYLAND	West Virginia Pulp & Paper Co.	Luke	330

State	Name		Pulp capacity 24 hrs.[1]
			1,000 lbs.
MISSISSIPPI	Flintkote Co.	Meridian	300
	International Paper Co.	Moss Point	541
	Masonite Corp.	Laurel	1,800
	Southern Johns-Manville Products Corp.	Natchez	600
	United States Gypsum Co.	Greenville	360
NORTH CAROLINA	Champion Paper & Fibre Co.	Canton	1,300
	Halifax Paper Co., Inc.	Roanoke Rapids	400
	Mead Corp.	Sylva	245
	North Carolina Pulp Co.	Plymouth	1,400
PENNSYLVANIA	P. H. Glatfelter Co.	Spring Grove	140
SOUTH CAROLINA	International Paper Co.	Georgetown	3,124
	Sonoco Products Co.	Hartsville	160
	West Virginia Pulp & Paper Co.	Charleston	1,400
TENNESSEE	Mead Corp.	Harriman	140
	Mead Corp.	Kingsport	280
	Mead Corp.	Nashville	120
	Southern Extract Co.	Knoxville	135
TEXAS	Champion Paper & Fibre Co.	Pasadena	820
	Southland Paper Mills, Inc.	Lufkin	960
VIRGINIA	Camp Manufacturing Co., Inc.	Franklin	660
	Chesapeake Corp.of Virginia	West Point	700
	Columbian Paper Co.	Bristol	150
	Columbian Paper Co.	Buena Vista	50
	Continental Can Co., Inc.	Hopewell	700
	Mead Corp.	Lynchburg	250
	National Container Corp. of Virginia	Big Island	300
	Southern Johns-Manville Products Corp.	Jarratt	400
	West Virginia Pulp & Paper Co.	Covington	920

1/ Southern Pulp and Paper Manufacturer, Vol. 12, No. 10A. Oct. 31, 1949.

2/ Used some wood but pulping capacity not available.

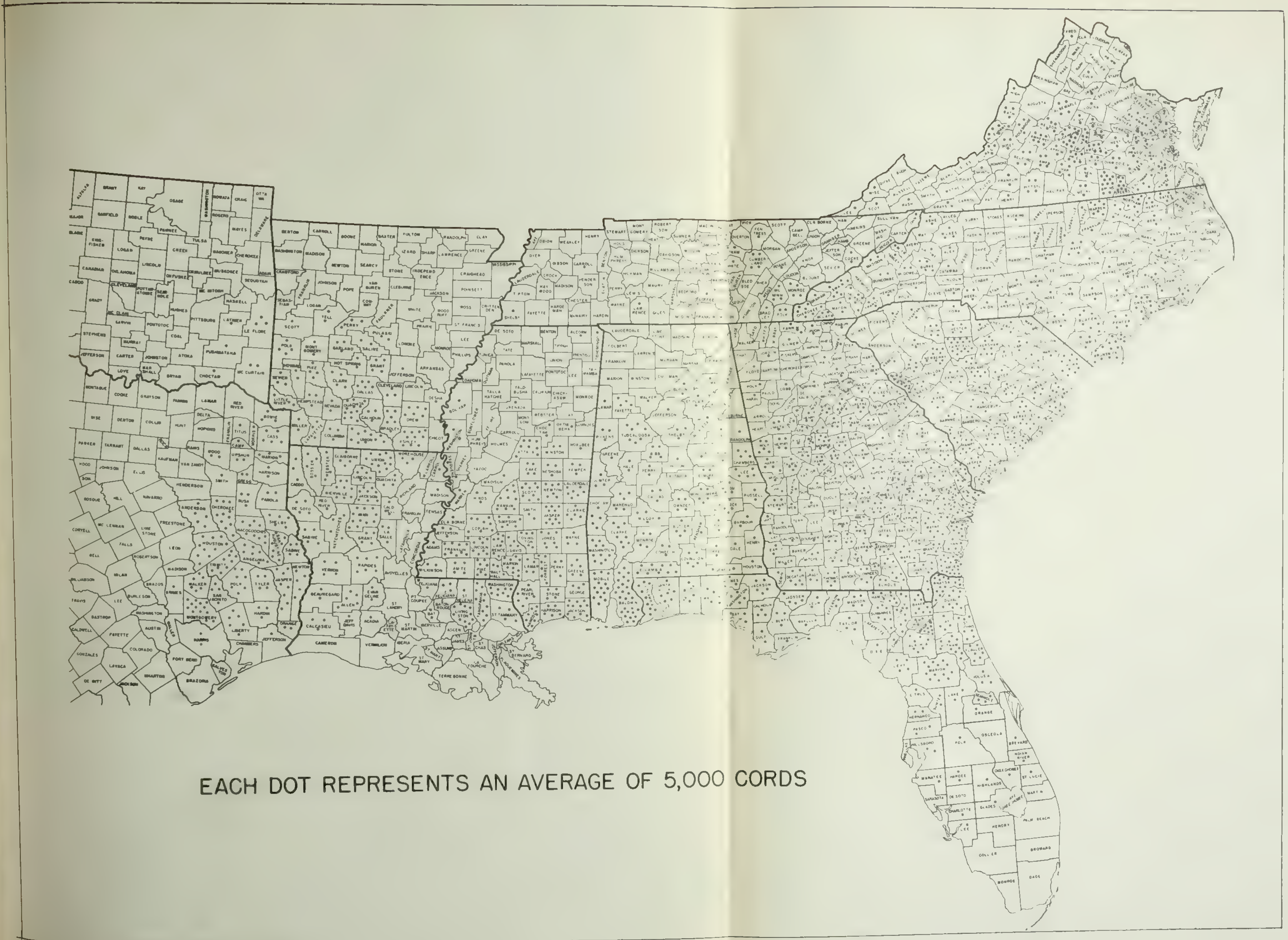


Figure 3.--Pulpwood production by county in the South, 1949

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia

No. 22 - Southern Forests as a Source of Pulpwood

No. 23 - 1946 Pulpwood Production by County in the Southeast

No. 24 - Southern Pulpwood Production and the Timber Supply

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina

No. 26 - 1946 Commodity Drain by County from South Carolina Forests

No. 27 - 1947 Pulpwood Production by County in the Southeast

No. 28 - South Carolina's Forest Resources, 1947

No. 29 - 1948 Pulpwood Production by County in the Southeast

No. 30 - Forest Resources of Northeast Florida, 1949

No. 31 - Forest Resources of Central Florida, 1949

No. 32 - Forest Resources of Northwest Florida, 1949

No. 33 - Forest Resources of South Florida, 1949

No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948

USDA MISCELLANEOUS PUBLICATION

No.681 - Virginia Forest Resources and Industries, 1949

FOREST SURVEY RELEASE NO. 36 OCTOBER, 1950

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FOREST STATISTICS FOR FLORIDA, 1949

by J. F. McCormack, Forester
Division of Forest Economics

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA

I. T. HAIG, Director

In cooperation with
FLORIDA FOREST SERVICE
TALLAHASSEE, FLORIDA
C. H. COULTER, State Forester

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

The original inventory of forest resources in Florida was made by the Forest Survey during the period 1934-36. Since then, forest growth, use of forest products, changes in land use, more intensive management practices, and other factors have caused changes in the growing stock that can only be measured accurately by on-the-ground surveys. A resurvey of the forest resources in Florida was started in June 1948 and completed in August 1949. Forest area and timber volume statistics for individual Survey Units have already been published. This progress report summarizes the forest area and timber volume statistics of the resurvey, and also presents growth and commodity drain data. When all of the statistical data have been analyzed, a State report will be prepared which will interpret the findings and focus attention upon the principal forest problems.

ACKNOWLEDGMENTS

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The Division of Forest Economics is under the direction of James W. Cruikshank. The timber inventory field work was under the supervision of Mackay B. Bryan. Photo interpretation work was done by N. F. Force, R. C. Aldrich, and R. W. Cooper. Sample plot work was under the direction of Fritz Lorentzen, E. W. Vetter, M. W. McClure, W. A. McCarty, H. W. Allen, E. A. Schluter, Ben Juskie, and F. S. Hill.

Office compilation of the data was under the direction of Miss Agnes Creasman, assisted by Mrs. Christine Paxton, Miss Priscilla Walker, and Miss Camilla Young.

CONTENTS

Page

1949 FACTS AND SIGNIFICANT CHANGES

Forest land area decreases slightly - - - - - - - - - - - - - - - - - - 1
Hardwood forest types increase - 2
Saw-timber volume decreases 17 percent - - - - - - - - - - - - - - - - 3
Hardwood saw timber of poor quality - - - - - - - - - - - - - - - - - - 7
Primary growing stock decreases 9 percent - - - - - - - - - - - - - - - 7
One-fourth of the total volume in cull trees - - - - - - - - - - - - 9
Three-fourths of the forest land understocked - - - - - - - - - - - - 9
Planting required on large areas - - - - - - - - - - - - - - - - - - 10
Turpentining activity declines - - - - - - - - - - - - - - - - - - - 10
Saw-timber growth about one billion board feet in 1948 - - - - - - 10
Commodity drain 937 million board feet in 1948 - - - - - - - - - - 11
Timber growth exceeds drain in 1948 - - - - - - - - - - - - - - - - - 12

SUMMARY TABLES

A. Forest area by survey unit, 1949 - - - - - - - - - - - - - - - - 2
B. Change in volume of saw timber, 1934-36 to 1949 - - - - - - - - 4
C. Saw-timber volume by survey unit, 1949 - - - - - - - - - - - - - 5
D. Volume of saw timber by stand-size class, 1949 - - - - - - - - - 6
E. Primary growing stock by survey unit, 1949 - - - - - - - - - - - 7
F. Change in volume of all trees 5.0 inches d.b.h. and larger, 1934-36 to 1949 - 8
G. Net annual growth by survey unit, 1948 - - - - - - - - - - - - - 10
H. Current annual growth per acre by stand-size class - - - - - - 11
I. Commodity drain by survey unit, 1948 - - - - - - - - - - - - - - 11
J. Net change in primary growing stock, 1948 - - - - - - - - - - - 13

DETAILED TABLES FOR THE STATE - 14--45

TABLES FOR COUNTIES - 46--52

STANDARD FOREST SURVEY TABLES - 54--64

DEFINITION OF TERMS - 65

RELIABILITY OF FOREST SURVEY DATA - - - - - - - - - - - - - - - - - - 71

HOW THE FOREST INVENTORY IS MADE - - - - - - - - - - - - - - - - - - 72

DETAILED TABLES FOR THE STATE

No. Page

AREA

1. Gross area by broad use class, 1949 - 14
2. Ownership of land, 1949 - 15
3. Commercial forest area by forest type and stand-size class, 1949 - 16

NET VOLUME OF SAW TIMBER, 1949

4. By species and stand-size class - 17
5. By species and diameter class - 18
6. By forest type and stand-size class - - - - - - - - - - - - - - - - - - - 19

NET VOLUME OF ALL TIMBER (in thousand cords), 1949

7. By species and stand-size class - 20
8. By species and diameter class - 21
9. By species and class of material - 22
10. By forest type and stand-size class - - - - - - - - - - - - - - - - - - - 23

NET VOLUME OF POLE-TIMBER TREES (in thousand cords), 1949

11. By forest type and stand-size class - - - - - - - - - - - - - - - - - - - 24

NET VOLUME OF ALL TIMBER (in thousand cubic feet), 1949

12. By species and diameter class - 25
13. By species and class of material - 26

AVERAGE VOLUME PER ACRE, 1949

14. Of saw timber by forest type, species group, and stand-size class - 27
15. Of all timber by forest type, species group, and stand-size class - 28

NAVAL STORES, 1949

16. Number of turpentine pine trees by working status and tree size - - 29
17. Area of turpentine timber crops by working status - - - - - - - - - - 29
18. Area of stump land and tonnage of wood naval stores by availability class - 30

STOCKING, 1949

19. Number of trees by species group, quality class, and tree size - - 31
20. Area of poorly-stocked stands and unstocked areas by plantability class - 32
21. Commercial forest area by forest type and degree of stocking - - - 33

GROWTH, 1948

22. Net annual growth of saw timber by stand-size class, species group, and survey unit - 34
23. Net annual growth of primary growing stock by stand-size class, species group, and survey unit - 35
24. Average growth of saw timber per acre by forest type, stand-size class, and survey unit - 36
25. Average growth of primary growing stock per acre by forest type, stand-size class, and survey unit - - - - - - - - - - - - - - - - - - - 37

COMMODITY DRAIN, 1948

26. From saw timber by species group and survey unit - - - - - - - - - - 38
27. From all timber by species group and survey unit - - - - - - - - - - 40

NET CHANGE, 1948

28. In saw-timber growing stock by species group and survey unit - - - 42
29. In primary growing stock by species group and survey unit - - - - - 44

TABLES FOR COUNTIES

No. Page

30. County area by broad use class, 1949 - - - - - - - - - - - - - - - - - 46

31. Ownership of commercial forest land by county, 1949 - - - - - - - - 47

32. Net volume of saw timber by county and species group, 1949 - - - - 48

33. Net volume of saw timber by county, species group, and diameter-class group, 1949 - 49

34. Net volume of all timber by county, pulping species group, and tree-diameter group, 1949 - 50

35. Commodity drain from primary growing stock by county and species group, 1948 - 52

STANDARD FOREST SURVEY TABLES

36. Land area by major classes of forest land. Florida, 1949 - - - - 54

37. Commercial forest land area by ownership class by stand-size class. Florida, 1949 - 55

38. Volume of live saw timber and primary growing stock on commercial forest land by stand-size class. Florida, 1949 - - - - - - - - - - 56

39. Volume of live saw timber and primary growing stock on commercial forest land by ownership class. Florida, 1949 - - - - - - - - - - - 57

40. Volume of live saw timber and primary growing stock on commercial forest land by species. Florida, 1949 - - - - - - - - - - - - - - 58

41. All-timber volume on commercial forest land by kind of material. Florida, 1949 - 59

42. Net growth and normal mortality of live saw timber and primary growing stock on commercial forest land by species group. Florida, 1948 - 60

43. Commodity drain of live saw-timber volume and primary growing stock on commercial forest land by species group. Florida, 1948 60

44. Commodity production by timber products in cubic volume and in standard units. Florida, 1948 - - - - - - - - - - - - - - - - - - - 61

45. Area of commercial forest land by generalized forest type. Florida, 1949 - 62

46. Live all-timber volume on commercial forest land by kind of growing stock, species group, tree-size class, and class of material. Florida, 1949 - 63

47. Volume of live saw timber on commercial forest land by diameter-class group by species. Florida, 1949 - - - - - - - - - - - - - - 64

48. Net growth, normal mortality, and commodity drain on primary growing stock on commercial forest land by tree-size class. Florida, 1948 - 64

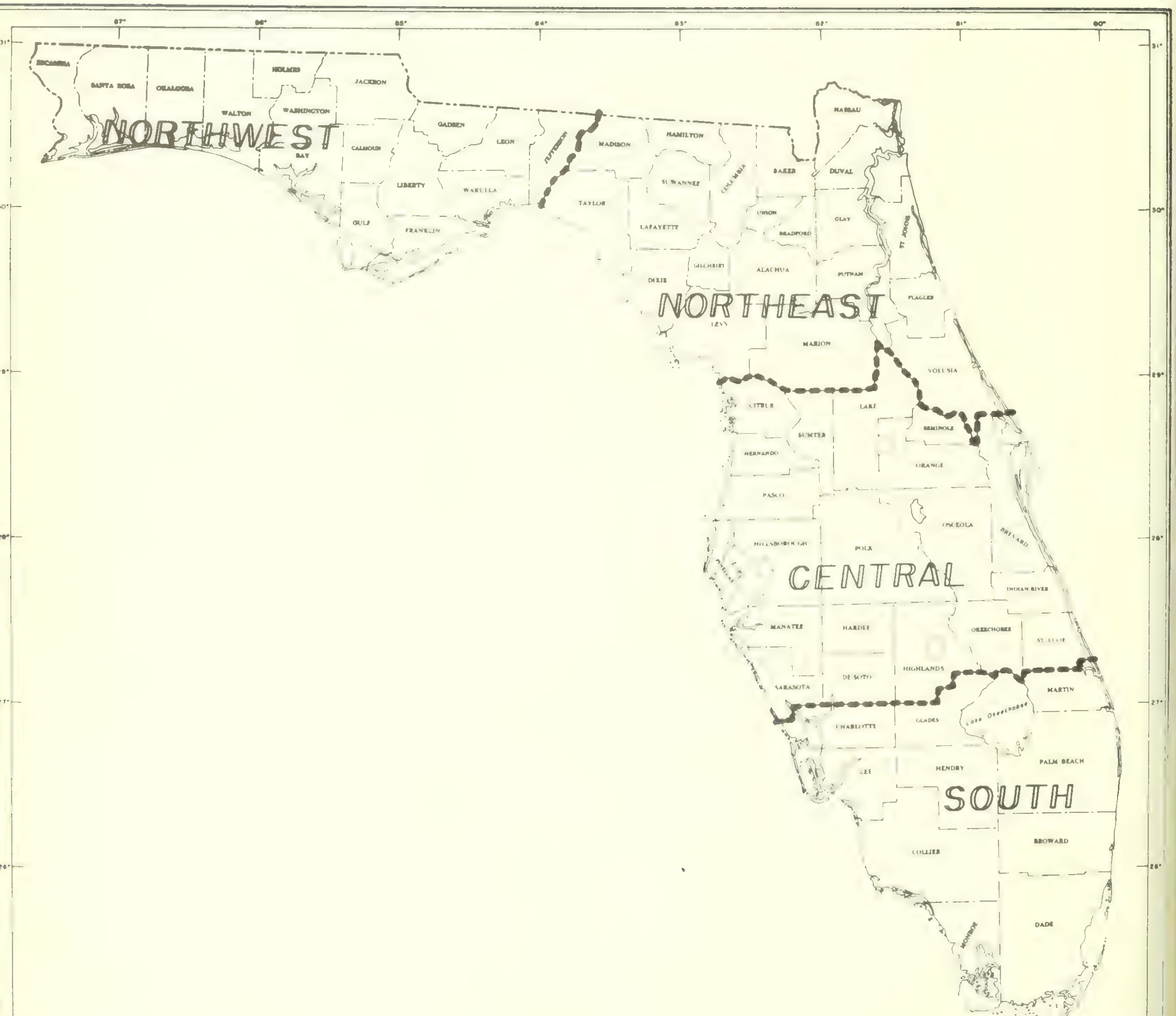

Figure 1.--Forest Survey Units in Florida

FOREST STATISTICS FOR FLORIDA, 1949

This report summarizes the statistical data on forest area and timber volumes for the State of Florida which have been published in individual survey unit releases. It also presents growth and commodity drain data. These statistics were obtained from a resurvey of the forest resources in the State which started in July 1948 and finished in August 1949. The field work was based on the combined use of aerial photographs from which the area of forest land and the areas of timber stands by broad size classes were determined, and on the examination of quarter-acre ground plots from which tree sizes, species, timber volumes, forest type, growth, and other data were obtained.

The original Forest Survey of Florida was made in 1934-36, and by comparing the current statistics with those obtained in the first survey, the trends and changes which have taken place during the interim can be determined.

1949 FACTS AND SIGNIFICANT CHANGES

Forest land area decreases slightly: Forests occupy 23 million acres, or 67 percent, of the 34.5 million acres of land in Florida. The remaining one-third of the total land area is almost equally divided between agricultural and urban uses which make up 16 percent, and marsh, grassland, and sandy coastal strips which occupy 17 percent of the area. The extent of the forest area is illustrated in figure 2.

The acreage of commercial forest land for the State as a whole decreased approximately two percent during the period between surveys. This decrease occurred in Central and South Florida, and is apparently due to land clearing in these areas for pasture and other agricultural uses.

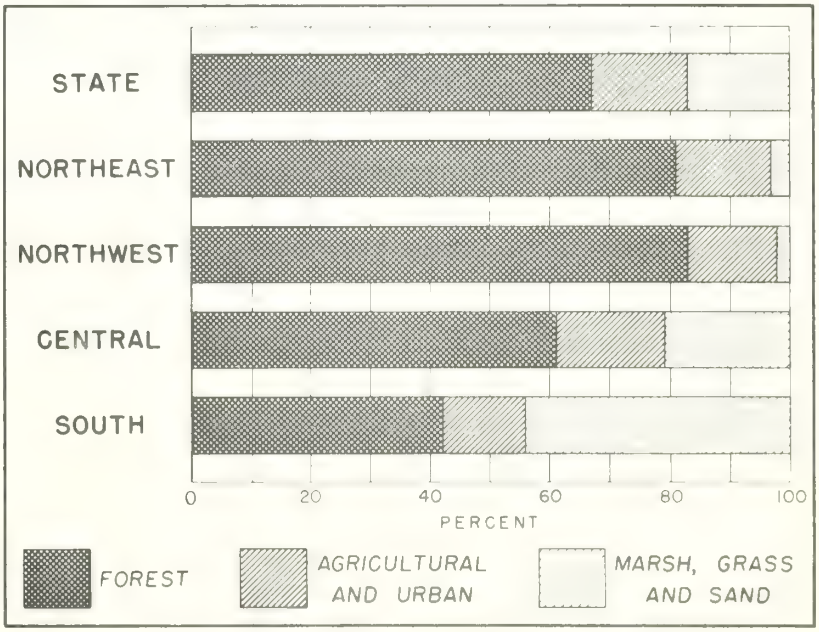

Figure 2.--Land use in Florida, 1949

Northern Florida, including the Northeast and Northwest survey units, is the most important timber-producing section of the State, with more than 80 percent of the land in forest use. Central and South Florida contain very large areas of marsh and grassland, and the current agricultural development activity will probably further reduce the amount of land in forests.

Approximately 1.5 million acres, or seven percent, of the forest land is classified as noncommercial because of its inability to produce timber of commercial size, or because the areas are so inaccessible the timber could not be economically harvested. Nearly three-fourths of this noncommercial forest acreage is located in South Florida, in or adjacent to the Everglades, and the remainder is principally on sandy coastal areas.

Forty-six thousand acres of productive forest land are in State Parks and other public areas where the timber stands are reserved from cutting. Such areas are excluded from the commercial forest land acreage since they are not available for the production of forest products.

Table A.--Forest area by survey unit, 1949

Survey unit	Total land area	Forest area		
		Total	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Percent[1]
Northeast	9,526	7,694	7,602	80
Northwest	7,320	6,060	5,928	81
Central	9,779	5,979	5,747	59
South	7,854	3,314	2,174	28
State	34,479	23,047	21,451	62

[1] Percent of total land area.

Hardwood forest types increase: The most striking change which has occurred in the composition of the forests is the shift in area from softwood to hardwood types. This trend is found throughout the State, and during the period between surveys the acreage of softwood types decreased 14 percent while the acreage of hardwood types increased 64 percent (fig. 3).

These type area changes are primarily due to cutting practices used in harvesting timber. Where stands of pine and cypress are mixed with hardwood species, or where an understory of hardwood trees exists, the preferred softwood species are usually cut leaving the hardwoods to occupy the site. The scrub oak type increased from 1.3 to 1.9 million acres, and the area in other hardwood types increased from 2.0 to 3.5 million acres. During the same period, softwood types decreased from 18.6 to 16.1 million acres.

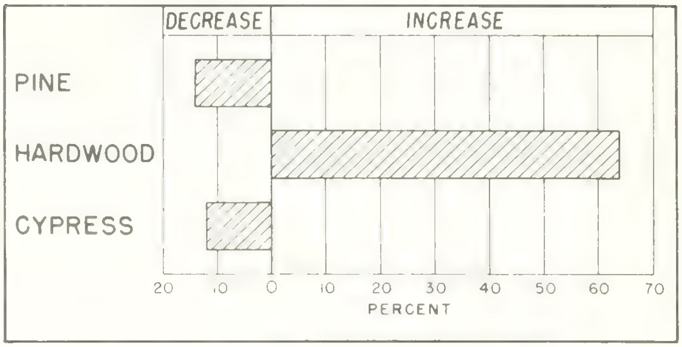

Figure 3.--Change in forest type areas on commercial forest land, 1934-36 to 1949

Pine types predominate throughout the State, occurring on 14.8 million acres, or 69 percent of the commercial forest land. Hardwood types occupy 5.4 million acres, or 25 percent, and cypress types occupy the remaining 1.3 million acres, or six percent (fig. 4).

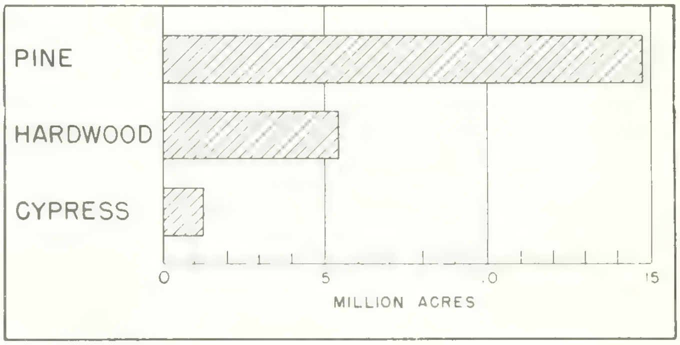

Figure 4.--Commercial forest land by broad types, 1949

Saw-timber volume decreases 17 percent: The total volume of sound saw-timber size trees in 1949 was 20.6 billion board feet. Softwoods made up over three-fourths of this volume with 12.7 billion board feet in pines and 3.2 billion in cypress. The hardwood volume amounted to 4.7 billion feet, or 23 percent of the total.

A comparison of the present saw-timber volume with the volume found in the first survey shows a decline of 17 percent. In making this comparison (table B), the present volume in hardwood trees 12 inches d.b.h. has been omitted since 12-inch hardwood trees were not considered saw timber in the original survey.

Table B.--Change in volume of saw timber, 1934-36 to 1949

Species group	1934-36	1949	Change
	Million bd. ft.	Million bd. ft.	Percent
Pine	13,987	12,691	- 9
Hardwood[1]	5,562	3,551	-36
Cypress[2]	3,873	3,186	18
All species	23,422	19,428	-17

[1] Excludes volume of hardwoods 12 inches d.b.h.

[2] Includes volume of cedar.

The decrease in saw-timber volume was fairly uniform over the northern and central portions of the State, ranging from 14 to 18 percent, but it amounted to 45 percent, or nearly half, of the volume in South Florida. The heavier decrease in board-foot volume in the southern unit can be attributed in part to heavy cutting operations which have removed much of the merchantable timber in the Big Cypress Swamp in Collier County and surrounding areas. The growing livestock industry has also contributed to the decrease of timber volumes in this section through clearing and development of land for pasture and grazing use.

Slash pine is the only major species in which the saw-timber volume increased during the period between surveys. It increased two percent in volume, while longleaf pine decreased 11 percent, and the volume of other pines decreased 32 percent. Hardwood and cypress species also showed a marked decline, being down 36 and 18 percent respectively.

Pine timber makes up 62 percent of the present saw-timber volume with hardwoods accounting for 23 percent and cypress 15 percent. In 1949, the volume of slash pine was 6.3 billion board feet, making it the most abundant individual species (fig. 5). The volume of this species amounted to nearly half the entire volume of pine timber and to 31 percent of the total saw-timber volume in the State. Longleaf pine was the second species in importance with a volume of 4.5 billion board feet, or 22 percent of the State total.

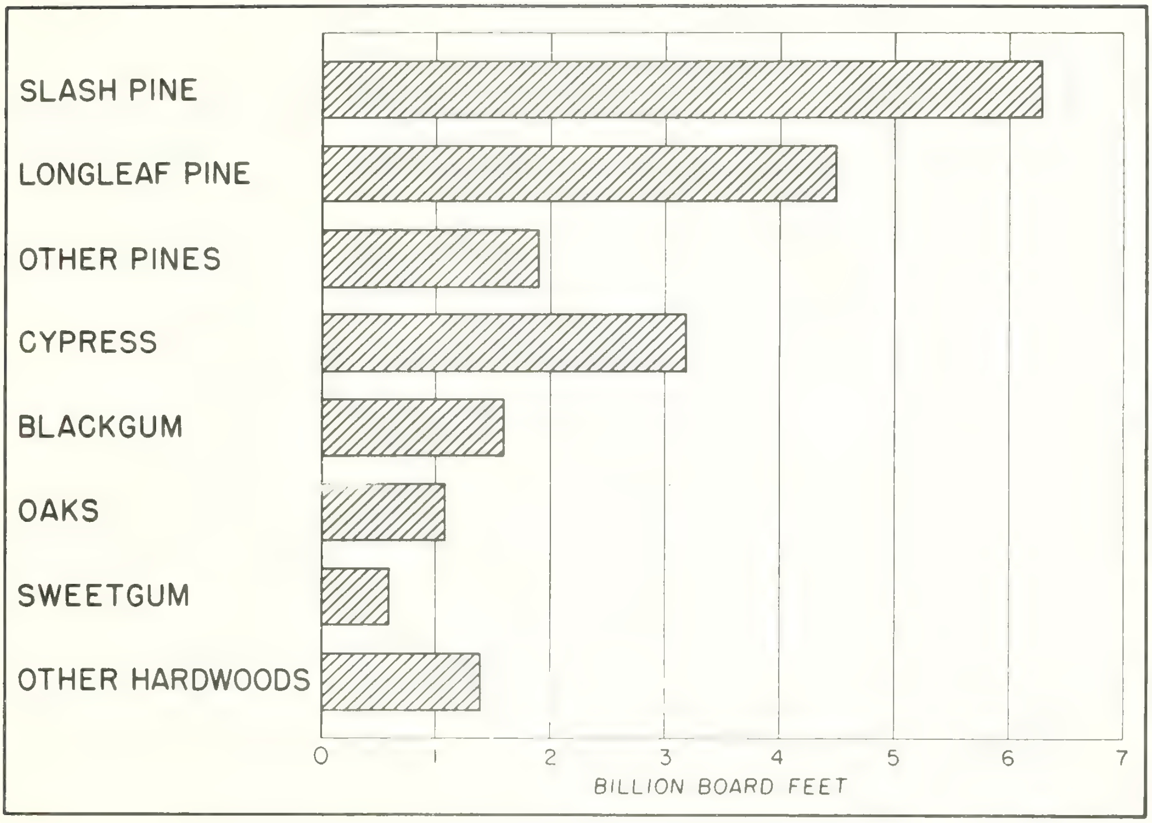

Figure 5.--Board-foot volume by species, 1949

Nearly half, 49 percent, of the total saw-timber volume in the State is located in Northeast Florida, where the average volume per acre is 1,326 board feet. Of the 10.1 billion board feet in this unit, 8.3 billion, or 82 percent, is softwood. Northwest Florida contains 6.3 billion board feet, or 31 percent of the State total, with an average of 1,069 board feet per acre. Central Florida has 3.3 billion board feet, or 16 percent of the total timber, averaging 587 board feet per acre, and South Florida has the remaining four percent (table C).

Table C.--Saw-timber volume by survey unit, 1949

Survey unit	Pine	Hardwood	Cypress	Total	
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent
Northeast	6,640	1,769	1,655	10,064	49
Northwest	3,823	2,146	369	6,338	31
Central	1,794	800	733	3,327	16
South	434	2	429	865	4
State	12,691	4,717	3,186	20,594	100

The size of the average pine and cypress saw-timber tree is only 11.4 inches in diameter at breast height, as 65 percent of the present saw-timber volume is in the 10- and 12-inch diameter classes. Softwood trees in the 14- to 18-inch diameter class contain 31 percent of the volume, and the remaining four percent is in the larger, more desirable trees (fig. 6). By comparison, only 44 percent of the pine and cypress volume was in the 10- to 12-inch diameter class in 1934-36.

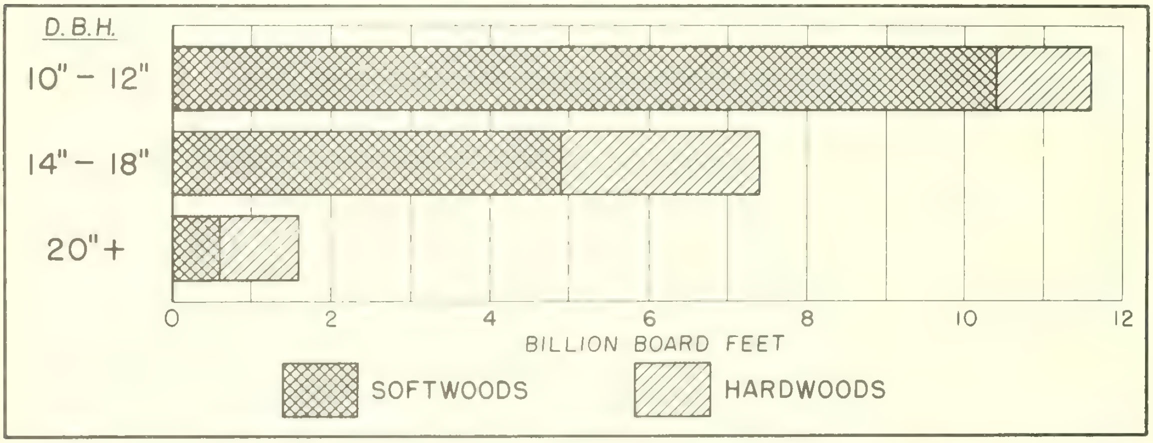

Figure 6.--Distribution of saw-timber volume by tree-diameter class, 1949

In addition to being concentrated in small size trees, much of the saw-timber volume is scattered throughout stands of pole timber, or in trees which have been left as remnants on seedling and sapling or poorly-stocked areas. Thirty-four percent of the saw-timber volume, or 7.0 billion board feet, is contained in stands having less than 1,500 board feet per acre (table D). This volume is scattered and mixed with immature trees in young or poorly-stocked stands over more than 18 million acres. The average volume per acre for timber in these conditions is only 388 board feet, making the economical harvesting of much of this volume either difficult or impossible.

Table D.--Volume of saw timber by stand-size class, 1949

Species group	Saw-timber stands	Pole-timber stands	Other stands	All stands
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.
Pine	7,419	1,973	3,299	12,691
Hardwood	3,561	629	527	4,717
Cypress	2,537	373	276	3,186
All species	13,517	2,975	4,102	20,594
Percent	66	14	20	100

Two-thirds of the saw-timber volume is in stands containing 1,500 board feet per acre or more. However, saw-timber size stands occupy only 3.2 million acres, or 15 percent, of the commercial forest area. Stands of large saw timber are very scarce. They contain 2.6 billion board feet of timber and are found on only two percent of the forest land. These larger stands have an average volume of 5,450 board feet per acre. The remaining 53 percent of the board-foot volume is in stands of small saw timber, which occupy 13 percent of the commercial forest land and average 3,960 board feet per acre.

Hardwood saw timber of poor quality: The remaining hardwood saw timber in Florida is composed largely of low-grade material. Only 12 percent of the hardwood volume is of select or number 1 quality, and 20 percent of the volume was grade 2. The remaining 68 percent is almost equally divided between grade 3A logs, which will produce only low-quality lumber, and grade 3B logs, which are primarily suitable for cross ties and timbers.

Primary growing stock decreases 9 percent: Saw-timber volumes in board feet are computed only on trees large enough to produce sawlogs (9 inches d.b.h. for softwoods and 11 inches d.b.h. for hardwoods). The cubic-foot volumes published in this release include the sound wood in pole-size trees (5.0 inches d.b.h. to saw-timber size) as well as the wood in the saw-timber trees. Trees below five inches in diameter are considered saplings or seedlings and are not assigned cubic-foot volumes. The cubic volume in all sound live trees five inches d.b.h. and larger is referred to as the primary growing stock.

In 1949, the cubic-foot volume of primary growing stock was 7.4 billion cubic feet, of which 4.2 billion, or 56 percent, was pine, 2.0 billion, or 27 percent, was hardwood, and the remaining 1.2 billion, or 17 percent, was cypress (table E).

Table E.--Primary growing stock by survey unit, 1949

Survey unit	Pine	Hardwood	Cypress	Total	
	Million cu. ft.	Million cu. ft.	Million cu. ft.	Million cu. ft.	Percent
Northeast	2,060	799	579	3,438	47
Northwest	1,321	854	110	2,285	31
Central	610	327	343	1,280	17
South	160	3	191	354	5
State	4,151	1,983	1,223	7,357	100

During the period between surveys, Florida has lost nine percent of its sound-tree or primary growing stock. The cubic volume of sound pine timber decreased four percent; hardwoods and cypress were down 15 and 14 percent respectively. Meanwhile, the cubic volume of sound material in cull trees, or secondary growing stock, increased sharply (table F).

Table F.--Change in volume of all timber, 1934-36 to 1949

Species group	Primary growing stock			Secondary growing stock		
	1934-36	1949	Change	1934-36	1949	Change
	Million cu. ft.	Million cu. ft.	Percent	Million cu. ft.	Million cu. ft.	Percent
Pine	[1]4,332	4,151	- 4	71	100	+41
Hardwood	2,329	1,983	15	1,313	2,393	+82
Cypress	1,420	1,223	-14	172	249	+45
All species	8,081	7,357	- 9	1,556	[2]2,742	+76

[1] Excludes 102 million cubic feet in turpentine butts.

[2] Excludes 169 million cubic feet of noncommercial hardwoods and 1,009 million cubic feet of palms, species not tallied on the 1934-36 survey. Also excludes 45 million cubic feet in limbs of 12-inch hardwoods.

Some of the changes which have brought about the over-all decline in sound timber are interesting and significant. In North Florida the sound cubic volume of pine has increased two percent, from 3,306 to 3,381 million cubic feet. In contrast with a slight decline in saw-timber volume for the same area, this change indicates that the number and volume of pole-size trees has increased sufficiently to offset the decrease which has taken place in the number of larger saw-timber trees. In Central and South Florida the volume of pine species decreased 25 percent in terms of cubic feet and 36 percent in board feet, indicating a general decline in the number of sound pine trees in all size classes. The sound cubic volumes of hardwood and cypress show general declines throughout the State except in Central Florida, where the hardwood volumes are about unchanged and the cypress volumes increased 20 percent.

For the State as a whole, the only increase in sound tree volumes was in trees of pole size (fig. 7). The heavy cutting of both softwood and hardwood trees of saw-timber size has overbalanced this increase in pole-timber volume, creating a net decrease in the volume of all sound trees combined. Hardwood trees in the 12-inch diameter group were classified as pole timber during the original survey. For comparison, the 1949 cubic volume of 12-inch hardwood trees has been included with the pole-timber volumes shown in figure 7.

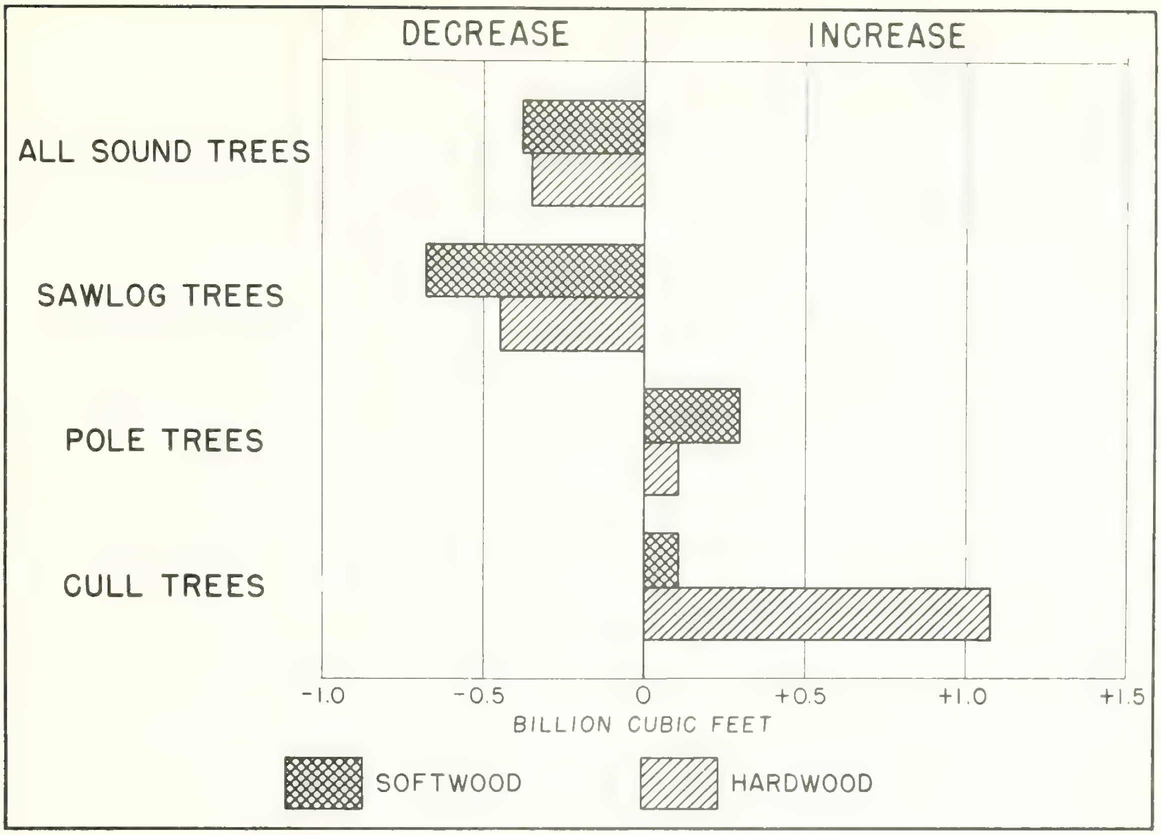

Figure 7.--Change in all-timber volume, 1934-36 to 1949

One-fourth of the total volume in cull trees: In 1949, the net cubic volume in cull trees amounted to 27 percent of the total net cubic volume, compared to 16 percent in the original survey. The change in cull hardwood volume is particularly significant. The volume increase in cull hardwood trees was 1.1 billion cubic feet, making the present volume 82 percent greater than was found in the first survey.

This increase is due, in part, to an increase of nearly 200 million cubic feet in the volume of scrub oak. Another 200 million cubic feet can be attributed to the increase of sound cull trees of other species. Thus, the major change was in the volume of rotten cull trees. Many hardwood trees which contained some degree of rotten material during the first survey have since become too rotten to qualify as sound trees. This condition is aggravated by cutting practices which seldom remove hardwoods with any marked degree of rotten cull from the stand.

Three-fourths of the forest land understocked: One outstanding feature of the commercial forest land in Florida is the degree of understocking in sound trees of desirable species. Stocking classifications are based on trees of all sizes, and they indicate the extent to which the available growing space is effectively utilized.

In 1949, there were 15.6 million acres of commercial forest land which were less than 40 percent stocked with sound trees. This area of poorly-stocked timberland amounts to nearly three-fourths of the commercial forest area and represents a serious deficiency in the timber-producing capacity of the State. Breaking this area down further, it was found that more than 9.7 million acres, or 45 percent, of the commercial forest land is seriously understocked or denuded, having less than 10 percent stocking in sound trees.

Planting required on large areas: Slightly over 60 percent of the poorly-stocked forest area in the pine and upland hardwood types will require planting if the land is to be restocked with trees. Over six million acres are suitable for the use of tractor-drawn planting machines. Approximately one million acres would require hand planting because the planting areas are less than 10 acres in size, or because ground conditions would prohibit the use of planting machinery.

Sites are poor over much of the poorly-stocked land, and commercially profitable plantations may be limited to only a part of the seven million acres.

Turpentining activity declines: The period between surveys has been marked by a considerable decrease in turpentining activity. The number of slash and longleaf pine trees 9 inches or larger being worked for gum decreased from nearly 36 million during the first survey to 13 million in 1949. The area supporting crops of working turpentine trees likewise decreased from nearly 2.5 million acres to 600 thousand acres. Most of the worked-out timber which characterized the turpentine belt in Florida some years ago has been removed from the stands.

Saw-timber growth about one billion board feet in 1948: The net annual growth of saw timber in Florida for 1948 was 1.1 billion board feet (table G). This growth includes the increase in volume of all sound saw-timber trees plus the volume of trees reaching saw-timber size during the year. It excludes the volume of trees dying from natural causes. The calendar year 1948 was chosen as a basis for computing growth so that comparison could be made with 1948 drain data. Growth of pine timber amounted to more than 800 million board feet, or 74 percent of the total. Geographically, the volume of growth is roughly in proportion to the distribution of the growing stock. The forests of Northeast Florida produced 589 million board feet of saw timber, or 52 percent of the total. Northwest Florida produced 358 million board feet and Central and South Florida combined produced 178 million.

Table G.--Net annual growth by survey unit, 1948

(in million board feet)

Survey unit	Pine	Hardwood	Cypress	Total
Northeast	471	71	47	589
Northwest	260	86	12	358
Central & South	106	33	39	178
State	837	190	98	1,125
(in million cubic feet)				
Northeast	132	33	15	180
Northwest	90	33	2	125
Central & South	36	13	16	65
State	258	79	33	370

The growth of all sound trees 5.0 inches d.b.h. and larger, both pole and saw-timber trees, amounted to 370 million cubic feet in 1948. This volume also includes trees reaching 5.0 inches in size during the year and excludes mortality.

The average current annual growth of saw timber per acre in Florida is only 65 board feet (table H). The average growth per acre of all sound trees 5.0 inches and larger is correspondingly low, being 20 cubic feet or approximately three-tenths of a standard cord. Saw-timber stands are growing at the much faster rate of 265 board feet per acre per year, or eight-tenths of a cord, with the highest rates of increment in the loblolly pine and slash pine types. The low average rate of growth for all stands of timber is primarily due to the large area of forest land which is in a poorly-stocked condition.

Table H.--Current annual growth per acre by stand-size class

Stand size	Saw-timber trees	All sound trees 5.0" d.b.h. and larger	
	Board feet	Cubic feet	Cords
Saw-timber stands	265	57	0.8
Pole-timber stands	68	40	0.6
Other stands	19	7	0.1
All stands	65	20	0.3

Commodity drain 937 million board feet in 1948: Timber cutting for the production of various forest products created a drain of 937 million board feet on the saw-timber growing stock (table I). The drain on all sound trees 5.0 inches d.b.h. and larger amounted to 232 million cubic feet. These commodity drain estimates have been adjusted for waste and overutilization in cutting operations according to Forest Survey inventory standards. They apply only to the sound-tree growing stock. Approximately 88 percent of the total drain was on softwood timber, and about half of the drain took place in Northeast Florida. Ninety percent of the drain came from saw-timber trees and ten percent from pole-size trees.

Table I.--Commodity drain by survey unit, 1948

(in million board feet)

Survey unit	Pine	Hardwood	Cypress	Total
Northeast	397	40	23	460
Northwest	164	49	12	225
Central & South	169	24	59	252
State	730	113	94	937

(in million cubic feet)

Survey unit	Pine	Hardwood	Cypress	Total
Northeast	105	9	5	119
Northwest	43	11	3	57
Central & South	38	6	12	56
State	186	26	20	232

The leading forest products are shown in figure 8. Sawlogs used for lumber, sawn ties, and timbers made up 41 percent of the total. In terms of cubic feet, the drain created by pulpwood cutting nearly equaled the sawlog drain, being 38 percent of the total drain. Veneer logs and bolts accounted for 8 percent of the drain; hewn ties, 6 percent; fuel wood, 2 percent; poles, 3 percent; and all other forest products, 2 percent.

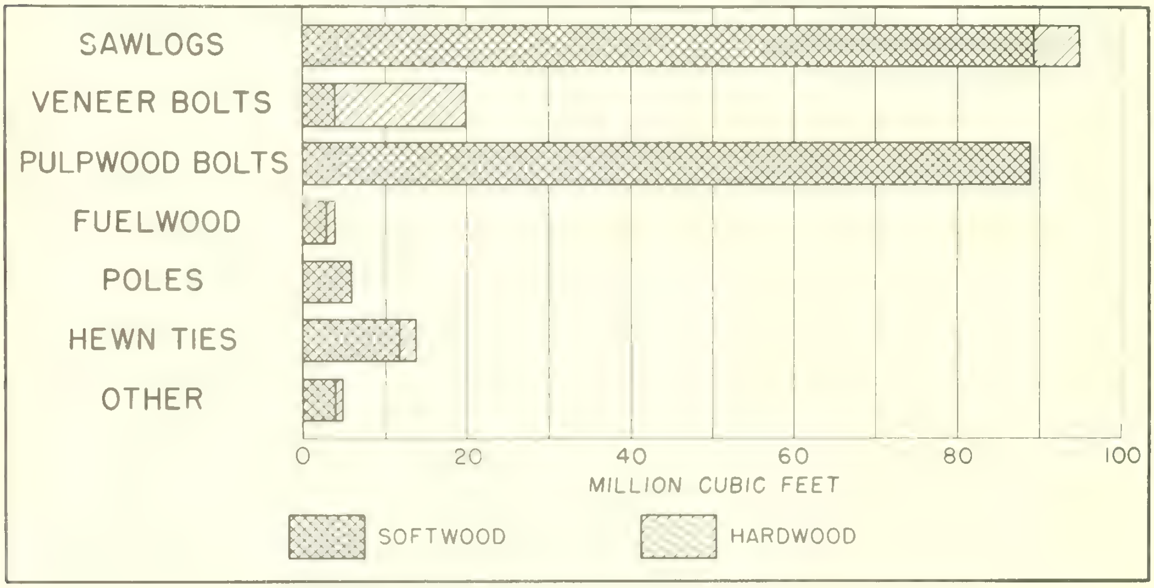

Figure 8.--Commodity drain by forest product, 1948

Timber growth exceeds drain in 1948: The net increase in volume on the sound-tree growing stock during 1948 exceeded drain in terms of both board feet and cubic feet (table J). For the State the net change resulting from board-foot growth of saw-timber trees amounted to an increase of 188 million board feet. However, in Central and South Florida the board-foot volume decreased 74 million board feet mainly because of heavy timber cutting operations and land clearing activity.

The cubic volume increase of all sound trees 5.0 inches and larger amounted to 138 million feet with the heavier increases in northern survey units and a slight increase in Central and South Florida. These changes during 1948 caused increases of about one percent in the State's saw-timber growing stock during the year and two percent in the total sound tree growing stock.

Table J.--Net change in primary growing stock, 1948[1]

(in million board feet)

Item	Pine	Hardwood	Cypress	Total
Growth on original stand[2]	658	144	58	860
Ingrowth	248	73	49	370
Total growth	906	217	107	1,230
Mortality	69	27	9	105
Net growth	837	190	98	1,125
Commodity drain	730	113	94	937
Net change	+107	+77	+4	+188

(in million cubic feet)

Item	Pine	Hardwood	Cypress	Total
Growth on original stand[2]	245	70	32	347
Ingrowth	33	18	8	59
Total growth	278	88	40	406
Mortality	20	9	7	36
Net growth	258	79	33	370
Commodity drain	186	26	20	232
Net change	+72	+53	+13	+138

[1] See table 28 for change in board-foot volume by survey unit.

[2] Growth on trees included in the growing stock at the beginning of the year.

Table 1.--Gross area[1] by broad use class, 1949

Class of use	Area	
	Acres	Percent
Forest land:		
Commercial	21,451,100	57.2
Noncommercial	1,267,600	3.4
Reserved		
Commercial	46,400	0.1
Noncommercial	281,900	0.8
Total forest	23,047,000	61.5
Nonforest land:		
Agriculture - active	3,346,800	8.9
Agriculture - idle	1,121,900	3.0
Marsh	5,899,700	15.7
Dunes and beaches	71,300	0.2
Urban and other[2]	991,900	2.7
Total nonforest	11,431,600	30.5
Total land area	34,478,600	92.0
Total water area[3]	2,999,800	8.0
All classes	37,478,400	100.0

1/ From U. S. Bureau of the Census, 1940.

2/ Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

3/ Includes 249 thousand acres of water according to Survey standards of area classification, but defined by the Bureau of the Census as land.

Table 2.--Ownership of land, 1949

Class of ownership	All land		Commercial forest land	
	Acres	Percent	Acres	Percent
Public land:				
Federal				
National forest	1,063,600	3.1	1,025,500	4.8
Indian	78,500	0.2	36,100	0.1
Other	1,896,900	5.5	919,600	4.3
Total Federal	3,039,000	8.8	1,981,200	9.2
State	1,145,900	3.3	223,300	1.0
County & municipal	146,900	0.5	55,600	0.3
Total public	4,331,800	12.6	2,260,100	10.5
Private land	30,146,800	87.4	19,191,000	89.5
All classes	34,478,600	100.0	21,451,100	100.0

Table 3.--Commercial forest area by forest type and stand-size class, 1949

Forest type[1]	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
	Acres	Acres	Acres	Acres	Acres	Acres
ongleaf pine	5,200	525,900	1,381,800	358,200	5,041,400	7,312,500
lash pine	96,300	873,000	752,600	901,000	3,415,300	6,038,200
oblolly pine	64,500	120,400	124,300	121,100	239,400	669,700
ond pine	5,900	47,900	55,500	57,700	215,300	382,300
and pine		15,600	92,500	144,000	136,000	388,100
ypress	31,400	499,000	381,700	142,100	227,900	1,282,100
All sftwd. types	203,300	2,081,800	2,788,400	1,724,100	9,275,300	16,072,900
owland hardwoods	280,100	660,200	654,500	505,200	655,700	2,755,700
pland hardwoods	2,700	5,400	87,300	66,300	425,000	586,700
crub oak	-	--	--	--	1,894,700	1,894,700
All hdwd. types	282,800	665,600	741,800	571,500	2,975,400	5,237,100
alm	-	--	-	-	141,100	141,100
ll types	486,100	2,747,400	3,530,200	2,295,600	12,391,800	21,451,100
Percent	2.3	12.8	16.4	10.7	57.8	100.0

[1] See description of forest types and stand-size classes in appendix.

Table 4.--Net volume[1] of saw timber by species and stand-size class, 1949

(in thousand board feet)

Species[2]	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
oftwoods:						
Longleaf pine	13,900	1,876,900	1,026,400	183,400	1,362,100	4,462,700
Slash pine	649,100	3,453,800	770,400	395,500	1,036,900	6,305,700
Loblolly pine	319,600	727,100	100,400	56,400	98,000	1,301,500
Pond pine	21,100	159,500	38,800	25,800	98,700	343,900
Other pines	123,900	73,900	36,300	22,900	19,700	276,700
Total	1,127,600	6,291,200	1,972,300	684,000	2,615,400	12,690,500
Cypress	225,400	2,262,800	364,400	95,000	147,400	3,095,000
Cedar	19,100	29,600	8,300	--	34,200	91,200
Total sftwds.	1,372,100	8,583,600	2,345,000	779,000	2,797,000	15,876,700
ardwoods:						
Tupelo	441,100	852,400	171,900	78,800	33,700	1,577,900
Sweetgum	196,900	294,100	54,600	56,300	27,200	629,100
Soft maple	38,400	125,000	15,400	4,900	6,000	189,700
Other soft hdwds.	144,600	367,300	107,400	26,900	38,800	685,000
Total	821,000	1,638,800	349,300	166,900	105,700	3,081,700
Red oaks	147,900	334,600	128,400	62,400	94,300	767,600
White oaks	146,700	70,800	63,100	16,300	21,800	318,700
Hickory	37,300	52,000	35,200	22,500	10,000	157,000
Ash	46,300	122,200	28,300	4,500	7,100	208,400
Other hard hdwds.	77,000	67,000	25,000	3,700	11,200	183,900
Total	455,200	646,600	280,000	109,400	144,400	1,635,600
Total hdwds.	1,276,200	2,285,400	629,300	276,300	250,100	4,717,300
ll species	2,648,300	10,869,000	2,974,300	1,055,300	3,047,100	20,594,000
Percent	12.9	52.8	14.4	5.1	14.8	100.0

1/ Log scale, International 1/4-inch rule.

2/ See appendix for species combined with others.

Table 5.--Net volume[1] of saw timber by species and diameter class, 1949

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Softwoods:						
Longleaf pine	3,658,500	765,700	38,500	--	4,462,700	21.7
Slash pine	3,933,700	2,139,100	232,900	--	6,305,700	30.6
Loblolly pine	448,900	696,100	89,700	66,800	1,301,500	6.3
Pond pine	171,700	162,700	9,500	-	343,900	1.7
Other pines	103,900	98,500	74,300	--	276,700	1.3
Total	8,316,700	3,862,100	444,900	66,800	12,690,500	61.6
Cypress	2,034,700	964,100	77,100	19,100	3,095,000	15.0
Cedar	38,600	43,400	9,200	--	91,200	0.5
Total sftwds.	10,390,000	4,869,600	531,200	85,900	15,876,700	77.1
Hardwoods:						
Tupelo	423,800	833,900	287,900	32,300	1,577,900	7.7
Sweetgum	143,400	370,100	98,800	16,800	629,100	3.1
Soft maple	53,700	106,200	23,500	6,300	189,700	0.9
Other soft hdwds.	189,600	412,200	79,900	3,300	685,000	3.3
Total	810,500	1,722,400	490,100	58,700	3,081,700	15.0
Red oaks	158,900	403,800	150,000	54,900	767,600	3.7
White oaks	43,800	105,200	119,500	50,200	318,700	1.5
Hickory	43,300	82,200	27,100	4,400	157,000	0.8
Ash	70,100	118,900	19,400	--	208,400	1.0
Other hard hdwds.	39,300	91,100	52,100	1,400	183,900	0.9
Total	355,400	801,200	368,100	110,900	1,635,600	7.9
Total hdwds.	1,165,900	2,523,600	858,200	169,600	4,717,300	22.9
All species	11,555,900	7,393,200	1,389,400	255,500	20,594,000	100.0
Percent	56.1	35.9	6.8	1.2	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included.

Table 6.--Net volume[1] of saw timber by forest type and stand-size class, 1949

(in thousand board feet)

Forest type[2]	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	19,200	1,786,900	1,056,900	129,500	1,298,200	4,290,700
Slash pine	661,100	3,420,000	646,500	418,600	960,900	6,107,100
Loblolly pine	367,100	689,300	99,000	57,100	70,100	1,282,600
Pond pine	17,500	154,100	37,400	29,600	74,400	313,000
Sand pine	--	44,100	30,500	900	18,600	94,100
Cypress	197,800	2,359,300	339,900	61,200	112,000	3,070,200
All sftwd. types	1,262,700	8,453,700	2,210,200	696,900	2,534,200	15,157,700
Lowland hardwoods	1,377,200	2,409,900	712,300	317,500	318,000	5,134,900
Upland hardwoods	8,400	5,400	51,800	40,900	84,000	190,500
Scrub oak	--	-	-	- -	110,900	110,900
All hdwd. types	1,385,600	2,415,300	764,100	358,400	512,900	5,436,300
All types	2,648,300	10,869,000	2,974,300	1,055,300	3,047,100	20,594,000
Percent	12.9	52.8	14.4	5.1	14.8	100.0

[1] Log scale, International 1/4-inch rule.

[2] See description of forest types and stand-size classes in appendix.

Table 7.--Net volume[1] of all timber by species and stand-size class, 1949

PRIMARY GROWING STOCK (in thousand cords)

Species	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	35	7,210	8,830	991	7,182	24,248
Slash pine	1,641	12,863	6,303	2,048	4,514	27,369
Loblolly pine	788	2,090	677	416	351	4,322
Pond pine	61	524	255	140	385	1,365
Other pines	282	242	604	166	70	1,364
Total	2,807	22,929	16,669	3,761	12,502	58,668
Cypress	556	9,734	4,085	521	650	15,546
Cedar	49	74	35	20	112	290
Total sftwds.	3,412	32,737	20,789	4,302	13,264	74,504
Hardwoods:						
Tupelo	1,367	4,814	2,136	596	229	9,142
Sweetgum	635	1,272	867	353	173	3,300
Soft maple	206	871	406	149	119	1,751
Other soft hdwds.	661	1,902	1,159	242	320	4,284
Total	2,869	8,859	4,568	1,340	841	18,477
Red oaks	487	1,554	1,226	335	478	4,080
White oaks	409	277	383	73	182	1,324
Hickory	138	199	262	146	43	788
Ash	250	828	478	49	87	1,692
Holly, dogwood	118	44	142	19	33	356
Other hard hdwds.	271	337	270	41	124	1,043
Total	1,673	3,239	2,761	663	947	9,283
Total hdwds.	4,542	12,098	7,329	2,003	1,788	27,760
Total primary	7,954	44,835	28,118	6,305	15,052	102,264
Percent	7.8	43.8	27.5	6.2	14.7	100.0

SECONDARY GROWING STOCK (in thousand cords)

Sound culls						
Softwoods	31	724	788	145	778	2,466
Hardwoods	2,150	5,153	4,109	1,790	9,502	22,704
Rotten culls	1,905	4,889	3,746	1,679	2,826	15,045
Palms	631	1,627	1,137	910	5,621	9,926
Total secondary	4,717	12,393	9,780	4,524	18,727	50,141

[1] Sound wood and bark.

Table 8.--Net volume[1] of all timber by species and diameter class, 1949

PRIMARY GROWING STOCK (in thousand cords)

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	4,733	7,044	6,671	3,825	1,894	81	24,248
Slash pine	4,736	5,500	6,141	5,216	5,272	504	27,369
Loblolly pine	434	610	573	695	1,683	327	4,322
Pond pine	164	306	186	291	397	21	1,365
Other pines	382	295	145	154	234	154	1,364
Total	10,449	13,755	13,716	10,181	9,480	1,087	58,668
Cypress	3,659	4,139	2,888	2,459	2,210	191	15,546
Cedar	33	43	52	47	96	19	290
Total sftwds.	14,141	17,937	16,656	12,687	11,786	1,297	74,504
Hardwoods:							
Tupelo	1,542	1,589	1,730	1,255	2,225	801	9,142
Sweetgum	684	478	489	420	954	275	3,300
Soft maple	454	431	357	159	278	72	1,751
Other soft hdwds.	656	874	917	552	1,078	207	4,284
Total	3,336	3,372	3,493	2,386	4,535	1,355	18,477
Red oaks	617	773	640	471	1,067	512	4,080
White oaks	85	232	195	125	273	414	1,324
Hickory	133	118	120	126	213	78	788
Ash	383	419	321	208	313	48	1,692
Holly, dogwood	226	87	30	10	3	--	356
Other hard hdwds.	160	194	222	113	228	26	1,043
Total	1,604	1,823	1,528	1,053	2,097	1,178	9,283
Total hdwds.	4,940	5,195	5,021	3,439	6,632	2,533	27,760
Total primary	19,081	23,132	21,677	16,126	18,418	3,830	102,264
Percent	18.7	22.6	21.2	15.8	18.0	3.7	100.0

SECONDARY GROWING STOCK (in thousand cords)

Sound culls							
Softwoods	725	549	526	255	274	137	2,466
Hardwoods	5,090	3,793	3,450	3,161	4,607	2,603	22,704
Rotten culls	978	1,546	1,450	1,444	4,183	5,444	15,045
Palms	196	1,050	4,200	3,655	825	--	9,926
Total secondary	6,989	6,938	9,626	8,515	9,889	8,184	50,141

[1] Sound wood and bark.

Table 9.--Net volume[1] of all timber by species and class of material, 1949

(in thousand cords)

Species	PRIMARY				SECONDARY	
	Saw-timber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	10,148	2,323	11,777	24,248	174	39
Slash pine	13,824	3,309	10,236	27,369	446	85
Loblolly pine	2,616	662	1,044	4,322	198	62
Pond pine	733	162	470	1,365	125	45
Other pines	554	133	677	1,364	200	9
Total	27,875	6,589	24,204	58,668	1,143	240
Cypress	6,170	1.578	7,798	15,546	1,269	1,716
Cedar	172	42	76	290	54	45
Total sftwds.	34,217	8,209	32,078	74,504	2,466	2,001
Hardwoods:						
Tupelo	3,466	815	4,861	9,142	2,669	3,591
Sweetgum	1,328	321	1,651	3,300	956	682
Soft maple	408	101	1,242	1,751	1,282	1,147
Other soft hdwds.	1,493	344	2,447	4,284	1,862	1,817
Total	6,695	1,581	10,201	18,477	6,769	7,237
Red oaks	1,677	373	2,030	4,080	2,673	2,824
White oaks	658	154	512	1,324	3,835	1,672
Hickory	336	81	371	788	269	175
Ash	466	103	1,123	1,692	1,185	838
Holly, dogwood	13	--	343	356	23	44
Scrub oak	--	-	--	-	7,341	--
Other hard hdwds.	372	95	576	1,043	609	254
Total	3,522	806	4.955	9,283	15,935	5,807
Total hdwds.	10,217	2,387	15,156	27,760	22,704	13,044
All species	44,434	10,596	47,234	102,264	25,170	15,045
Percent	43.4	10.4	46.2	100.0	62.6	37.4

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[1] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

[2] Includes limb volume of sound hardwood saw-timber trees.

Table 10.--Net volume[1] of all timber by forest type and stand-size class, 1949

PRIMARY GROWING STOCK (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	54	7,008	9,055	795	6,912	23,824
Slash pine	1,935	13,501	6,148	2,182	4,554	28,320
Loblolly pine	972	2,292	931	461	314	4,970
Pond pine	52	523	228	98	312	1,213
Sand pine	-	153	594	57	58	862
Cypress	536	10,580	3,928	387	481	15,912
All sftwd. types	3,549	34,057	20,884	3,980	12,631	75,101
Lowland hdwds.	4,383	10,744	6,775	2,102	1,639	25,643
Upland hdwds.	22	34	459	223	321	1,059
Scrub oak	--	--	-	--	461	461
All hdwd. types	4,405	10,778	7,234	2,325	2,421	27,163
All types	7,954	44,835	28,118	6,305	15,052	102,264
Percent	7.8	43.8	27.5	6.2	14.7	100.0

SECONDARY GROWING STOCK (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	5	333	462	98	2,006	2,904
Slash pine	275	1,122	494	250	695	2,836
Loblolly pine	213	469	405	351	452	1,890
Pond pine	11	62	22	32	27	154
Sand pine	--	14	116	12	45	187
Cypress	229	1,902	956	154	451	3,692
All sftwd. types	733	3,902	2,455	897	3,676	11,663
Lowland hdwds.	3,346	6,815	5,829	2,394	4,547	22,931
Upland hdwds.	7	49	359	323	1,726	2,464
Scrub oak	-	--	--	--	3,157	3,157
All hdwd. types	3,353	6,864	6,188	2,717	9,430	28,552
All types	4,086	10,766	8,643	3,614	13,106	40,215
Percent	10.1	26.8	21.5	9.0	32.6	100.0

[1] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

Table 11.--Net volume[1/] of pole-timber trees by forest type and stand-size class, 1949

PRIMARY GROWING STOCK (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	10	2,077	6,059	439	3,291	11,876
Slash pine	338	4,038	4,335	1,034	1,973	11,718
Loblolly pine	114	502	662	308	134	1,720
Pond pine	6	115	133	20	111	385
Sand pine	--	29	504	55	7	595
Cypress	84	4,500	3,019	229	199	8,031
All sftwd. types	552	11,261	14,712	2,085	5,715	34,325
Lowland hdwds.	948	4,294	4,870	1,272	813	12,197
Upland hdwds.	3	19	312	113	109	556
Scrub oak	--	--	--	--	156	156
All hdwd. types	951	4,313	5,182	1,385	1,078	12,909
All types	1,503	15,574	19,894	3,470	6,793	47,234
Percent	3.2	33.0	42.1	7.3	14.4	100.0

SECONDARY GROWING STOCK (in thousand cords)

Forest type	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	3	257	292	79	1,248	1,879
Slash pine	135	487	302	121	388	1,433
Loblolly pine	64	174	178	112	102	630
Pond pine	5	28	20	1	5	59
Sand pine	--	6	70	12	11	99
Cypress	92	880	644	63	269	1,948
All sftwd. types	299	1,832	1,506	388	2,023	6,048
Lowland hdwds.	730	1,895	2,288	1,022	1,924	7,859
Upland hdwds.	4	9	219	109	603	944
Scrub oak	--	--	--	--	2,456	2,456
All hdwd. types	734	1,904	2,507	1,131	4,983	11,259
All types	1,033	3,736	4,013	1,519	7,006	17,307
Percent	5.9	21.6	23.2	8.8	40.5	100.0

[1/] Sound wood and bark, excluding volume of palms shown in tables 7 and 8.

Table 12.--Net volume[1] of all timber by species and diameter class, 1949

PRIMARY GROWING STOCK (in thousand cubic feet)

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	277,911	474,081	482,643	289,482	150,495	7,017	1,681,629
Slash pine	278,411	369,363	444,879	394,564	420,234	42,429	1,949,880
Loblolly pine	25,513	41,474	41,313	52,781	134,520	28,089	323,690
Pond pine	9,684	20,859	13,569	22,169	31,881	1,747	99,909
Other pines	22,600	19,757	10,424	11,715	18,667	13,268	96,431
Total	614,119	925,534	992,828	770,711	755,797	92,550	4,151,539
Cypress	240,386	309,252	230,258	207,541	193,382	18,059	1,198,878
Cedar	2,193	3,278	4,175	4,410	8,935	816	23,807
Total sftwds.	856,698	1,238,064	1,227,261	982,662	958,114	111,425	5,374,224
Hardwoods:							
Tupelo	93,459	104,215	120,233	95,288	176,135	65,115	654,445
Sweetgum	41,464	32,227	33,915	31,597	75,406	22,620	237,229
Soft maple	27,302	28,914	24,926	11,951	21,786	5,928	120,807
Other soft hdwds.	39,622	58,644	63,523	42,302	86,005	16,904	307,000
Total	201,847	224,000	242,597	181,138	359,332	110,567	1,319,481
Red oaks	37,267	50,918	43,898	35,816	85,054	42,059	295,012
White oaks	5,087	15,282	13,074	9,551	21,658	33,850	98,502
Hickory	7,998	7,899	8,186	9,429	16,922	6,383	56,817
Ash	23,001	27,224	22,049	15,747	24,781	3,773	116,575
Holly, dogwood	13,522	6,080	2,084	738	218	--	22,642
Other hard hdwds.	9,776	12,716	14,803	8,512	18,126	10,267	74,200
Total	96,651	120,119	104,094	79,793	166,759	96,332	663,748
Total hdwds.	298,498	344,119	346,691	260,931	526,091	206,899	1,983,229
Total primary	1,155,196	1,582,183	1,573,952	1,243,593	1,484,205	318,324	7,357,453
Percent	15.7	21.5	21.4	16.9	20.2	4.3	100.0

SECONDARY GROWING STOCK (in thousand cubic feet)

Species	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	All diameters
Sound culls							
Softwoods	46,242	39,672	40,416	20,083	22,552	12,638	181,603
Hardwoods	308,723	249,602	239,976	233,964	362,533	212,272	1,607,070
Rotten culls	59,972	100,251	103,551	111,218	337,847	454,357	1,167,196
Palms	18,355	103,515	424,824	376,136	86,442	--	1,009,272
Total secondary	433,292	493,040	808,767	741,401	809,374	679,267	3,965,141

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[1] Excluding bark.

Table 13.--Net volume[1] of all timber by species and class of material, 1949

(in thousand cubic feet)

Species	PRIMARY				SECONDARY	
	Saw-timber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	767,291	162,346	751,992	1,681,629	12,960	2,947
Slash pine	1,065,346	236,760	647,774	1,949,880	30,994	6,131
Loblolly pine	207,446	49,257	66,987	323,690	15,271	4,326
Pond pine	56,477	12,889	30,543	99,909	8,916	3,656
Other pines	43,592	10,482	42,357	96,431	14,315	529
Total	2,140,152	471,734	1,539,653	4,151,539	82,456	17,589
Cypress	532,555	116,685	549,638	1,198,878	93,840	146,205
Cedar	14,816	3,520	5,471	23,807	5,307	3,905
Total sftwds.	2,687,523	591,939	2,094,762	5,374,224	181,603	167,699
Hardwoods:						
Tupelo	276,482	60,056	317,907	654,445	192,019	275,605
Sweetgum	105,862	23,761	107,606	237,229	68,408	52,193
Soft maple	32,537	7,128	81,142	120,807	90,267	85,726
Other soft hdwds.	119,283	25,928	161,789	307,000	133,732	138,629
Total	534,164	116,873	668,444	1,319,481	484,426	552,153
Red oaks	134,049	28,880	132,083	295,012	196,767	220,360
White oaks	52,937	12,122	33,443	98,502	286,669	130,903
Hickory	26,808	5,926	24,083	56,817	20,005	13,709
Ash	36,344	7,957	72,274	116,575	80,127	61,201
Holly, dogwood	956	--	21,686	22,642	1,562	2,779
Scrub oak	-	-		-	493,850	-
Other hard hdwds.	29,892	7,013	37,295	74,200	43,664	18,392
Total	280,986	61,898	320,864	663,748	1,122,644	447,344
Total hdwds.	815,150	178,771	989,308	1,983,229	1,607,070	999,497
All species	3,502,673	770,710	3,084,070	7,357,453	1,788,673	1,167,196
Percent	47.6	10.5	41.9	100.0	60.5	39.5

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[1] Excluding bark and volume of palms shown in table 12.

[2] Includes limb volume of sound hardwood saw-timber trees.

Table 14.--Average volume[1] per acre of saw timber by forest type, species group, and stand-size class, 1949

(in board feet)

Forest type and species group	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine						
Softwood	3,692	3,386	753	359	256	582
Hardwood	--	13	12	2	2	4
Slash pine						
Softwood	6,355	3,855	829	462	280	989
Hardwood	517	63	30	2	1	22
Loblolly pine						
Softwood	5,177	5,113	523	211	275	1,652
Hardwood	509	609	274	260	18	263
Pond pine						
Softwood	2,954	3,159	674	514	345	811
Hardwood	--	60	--	--	--	7
Sand pine						
Softwood	--	2,833	235	6	137	220
Hardwood	--	--	95	--	--	23
Cypress						
Softwood	5,199	4,395	883	411	478	2,232
Hardwood	1,102	332	8	19	14	163
Lowland hardwoods						
Softwood	809	656	323	219	211	406
Hardwood	4,108	2,994	765	410	274	1,457
Upland hardwoods						
Softwood	--	190	86	135	84	90
Hardwood	2,988	828	506	484	114	234
Scrub oak						
Softwood	--	--	--	--	58	58
Hardwood	--	--	--	--	1	1
All types						
Softwood	2,823	3,124	664	339	228	745
Hardwood	2,625	832	178	120	20	221

[1] Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all timber by forest type, species group, and stand-size class, 1949

(in standard cords)

Forest type and species group	Large saw-timber stands		Small saw-timber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[2]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	10.4	--	13.2	0.1	6.4	0.1	1.4	(3/)	3.2	(3/)
Hardwood	--	1.0	0.1	0.5	0.1	0.3	(3/)	0.4	(3/)	0.4
Slash pine										
Softwood	16.3	0.4	14.6	0.3	7.9	0.2	1.5	0.1	4.4	0.1
Hardwood	4.8	2.6	0.9	1.0	0.3	0.4	(3/)	0.1	0.3	0.3
Loblolly pine										
Softwood	12.6	0.1	14.9	0.5	4.7	0.4	1.5	0.2	5.6	0.3
Hardwood	2.5	3.2	4.2	3.4	2.8	2.9	0.6	2.0	1.8	2.5
Pond pine										
Softwood	8.8	0.8	10.5	0.3	3.9	0.4	1.5	0.2	3.1	0.2
Hardwood	--	1.0	0.4	1.0	0.2	--	--	(3/)	0.1	0.2
Sand pine										
Softwood	--	--	9.8	0.9	5.7	1.1	0.4	0.1	2.0	0.4
Hardwood	--	--	--	--	0.7	0.1	--	0.1	0.2	0.1
Cypress										
Softwood	12.0	1.6	18.7	1.7	9.7	2.1	2.2	1.2	11.1	1.7
Hardwood	5.0	5.7	2.5	2.1	0.6	0.4	0.1	0.4	1.3	1.2
Lowland hardwoods										
Softwood	1.9	0.4	1.9	0.3	1.4	0.2	0.8	0.1	1.3	0.2
Hardwood	13.7	11.6	14.4	10.1	9.0	8.7	2.4	5.8	8.0	8.1
Upland hardwoods										
Softwood	--	--	0.6	--	0.4	--	0.2	(3/)	0.2	(3/)
Hardwood	7.9	2.5	5.8	9.2	4.9	4.1	0.7	3.2	1.2	3.4
Scrub oak										
Softwood	-	-	--	--	-	--	0.2	(3/)	0.2	(3/)
Hardwood	--	-	--	--	--	--	(3/)	1.7	(3/)	1.7
All types										
Softwood	7.0	0.4	11.9	0.5	5.9	0.4	1.2	0.1	3.5	0.2
Hardwood	9.3	8.0	4.4	3.4	2.1	2.1	0.3	1.0	1.3	1.7

[1] Sound wood and bark, excluding volume of palms.

[2] Sound trees; cull trees.

[3] Less than 0.05 cords per acre.

Table 16.--Number[1] of turpentine pine trees by working status and tree size, 1949

(in thousands of trees)

Working status	Pole-size trees	Small saw-timber trees	Large saw-timber trees	All trees
Round timber	306,118	102,246	3,925	412,289
Working timber	734	12,803	355	13,892
Resting timber	1,486	13,639	750	15,875
Abandoned timber	936	6,246	603	7,785
Worked-out timber	586	6,627	564	7,777
All classes	309,860	141,561	6,197	457,618

[1] Includes sound cull trees.

Table 17.--Area of turpentine timber crops by working status, 1949

Crop working status	Area	
	Acres	Percent
Round timber	1,542,300	49.1
Working timber		
Front-faced	372,300	11.8
Back-faced	256,600	8.2
Resting timber	514,100	16.4
Abandoned timber	255,400	8.1
Worked-out timber	202,700	6.4
All classes	3,143,400	100.0

Table 18.--Area of stump land and tonnage of wood naval stores stumps by availability class, 1949

Availability class	Area	Tonnage[1]
	Acres	Thousand tons
Merchantable area	9,870,200	[4] 26,551
Marginal area[2]	401,500	1,065
Potential area[3]	548,000	1,489
Inaccessible area	228,800	629
All classes	11,048,500	29,734

[1] Includes stumps on agricultural land.

[2] Stump-land areas less than 25 acres in extent and partially worked areas.

[3] Unworkable at present due to density of timber stands.

[4] A check on the tons of stumps harvested under existing practices indicates the recoverable tonnage is approximately two-thirds of the merchantable volume shown.

Table 19.--Number of trees[1] by species group, quality class, and tree size, 1949

(in thousands of trees)

Species group and quality class	Sapling-size trees	Pole size trees	Small saw-timber trees	Large saw timber trees	All trees
Yellow pines:					
Sound trees	1,169,968	338,729	155,749	8,632	1,673,078
Sound culls	67,791	6,159	2,868	343	77,161
Rotten culls	45,413	1,617	1,083	185	48,298
Total	1,283,172	346,505	159,700	9,160	1,798,537
Other softwoods:					
Sound trees	310,301	117,088	42,838	2,080	472,307
Sound culls	53,389	12,762	2,907	141	69,199
Rotten culls	29,691	11,158	7,058	1,898	49,805
Total	393,381	141,008	52,803	4,119	591,311
Soft-textured hdwds.:					
Sound trees	590,848	126,737	27,200	4,581	749,366
Sound culls	211,056	39,872	6,772	779	258,479
Rotten culls	83,736	42,085	14,717	5,155	145,693
Total	885,640	208,694	48,689	10,515	1,153,538
Hard-textured hdwds.:					
Sound trees	386,315	65,950	13,944	3,605	469,814
Sound culls	1,063,902	170,990	18,234	3,609	1,256,735
Rotten culls	55,661	27,534	8,643	4,739	96,577
Total	1,505,878	264,474	40,821	11,953	1,823,126
Palms	(2/)	17,943	51,917	119	69,979
All species	4,068,071	978,624	353,930	35,866	5,436,491

[1] All trees 1.0 inch d.b.h. and larger.

[2] Data not recorded.

Table 20.--Area of poorly stocked stands and unstocked areas by plantability class, 1949

Forest type[1]	No planting required[2]	Suitable for machine planting	Hand planting required	All classes
	Acres	Acres	Acres	Acres
Longleaf pine	2,291,200	2,618,800	131,400	5,041,400
Slash pine	1,298,400	1,661,000	455,900	3,415,300
Loblolly pine	137,000	73,700	28,700	239,400
Pond pine	124,100	63,000	28,200	215,300
Sand pine	39,100	71,300	25,600	136,000
Upland hardwoods	230,200	98,000	96,800	425,000
Scrub oak	176,500	1,433,600	284,600	1,894,700
All types	4,296,500	6,019,400	1,051,200	11,367,100
Percent	37.8	53.0	9.2	100.0

[1] Lowland types not classified.

[2] Sufficient seed trees present or area is restocking naturally.

Table 21.--Commercial forest area by forest type and degree of stocking, 1949

STOCKING IN SOUND TREES

Forest type	Degree of stocking[1/]					Total area
	0-9 percent	10-39 percent	40-69 percent	70-99 percent	100+ percent	
	Acres	Acres	Acres	Acres	Acres	Acres
Longleaf pine	3,859,500	2,441,100	648,100	224,700	139,100	7,312,500
Slash pine	2,753,800	1,750,400	630,300	374,100	529,600	6,038,200
Loblolly pine	165,700	201,200	150,000	42,200	110,600	669,700
Pond pine	149,600	179,800	47,400	5,500	--	382,300
Sand pine	115,400	125,400	43,600	23,500	80,200	388,100
Cypress	158,400	212,200	221,300	275,300	414,900	1,282,100
Lowland hdwds.	337,000	662,100	828,500	407,700	520,400	2,755,700
Upland hdwds.	308,300	152,700	47,600	53,800	24,300	586,700
Scrub oak	1,748,500	123,000	23,200	--	--	1,894,700
Palm	141,100	-	-		-	141,100
All types	9,737,300	5,847,900	2,640,000	1,406,800	1,819,100	21,451,100
Percent	45.4	27.3	12.3	6.5	8.5	100.0

STOCKING IN TREES OF ALL QUALITY CLASSES[2/]

Forest type	0-9 percent	10-39 percent	40-69 percent	70-99 percent	100+ percent	Total area
Longleaf pine	3,312,700	2,362,100	906,500	450,800	280,400	7,312,500
Slash pine	2,555,700	1,734,600	665,500	389,800	692,600	6,038,200
Loblolly pine	73,300	184,900	111,400	112,700	187,400	669,700
Pond pine	141,700	171,800	54,100	3,700	11,000	382,300
Sand pine	90,800	58,700	72,500	41,800	124,300	388,100
Cypress	112,900	168,200	132,600	232,100	636,300	1,282,100
Lowland hdwds.	116,900	225,600	368,200	613,900	1,431,100	2,755,700
Upland hdwds.	74,900	163,400	104,000	123,000	121,400	586,700
Scrub oak	347,500	800,100	493,600	127,900	125,600	1,894,700
Palm	54,200	52,600	10,200	11,500	12,600	141,100
All types	6,880,600	5,922,000	2,918,600	2,107,200	3,622,700	21,451,100
Percent	32.1	27.6	13.6	9.8	16.9	100.0

[1/] Includes trees 1.0 inch d.b.h. and larger.

[2/] Includes sound trees, cull trees, and palms.

Table 22.--Net annual growth[1] of saw timber by stand-size class, species, group, and survey unit, 1948

Stand-size class	Softwoods		Gum, maple, bay, and magnolia	Other hardwoods	All species
	Yellow pine	Other			
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.
STATE					
Saw-timber stands	492,600	75,500	103,700	44,600	716,400
Pole-timber stands	135,700	14,100	15,200	17,400	182,400
Other stands	208,500	8,500	5,100	4,400	226,500
All stands	836,800	98,100	124,000	66,400	1,125,300
NORTHEAST					
Saw-timber stands	311,200	34,400	40,300	17,500	403,400
Pole-timber stands	84,000	9,100	6,100	5,100	104,300
Other stands	76,300	3,400	300	1,600	81,600
All stands	471,500	46,900	46,700	24,200	589,300
NORTHWEST					
Saw-timber stands	139,900	8,400	45,100	19,900	213,300
Pole-timber stands	35,500	2,300	6,000	9,500	53,300
Other stands	84,400	1,000	3,400	2,600	91,400
All stands	259,800	11,700	54,500	32,000	358,000
CENTRAL AND SOUTH					
Saw-timber stands	41,500	32,700	18,300	7,200	99,700
Pole-timber stands	16,200	2,700	3,100	2,800	24,800
Other stands	47,800	4,100	1,400	200	53,500
All stands	105,500	39,500	22,800	10,200	178,000

[1] Log scale, International 1/4-inch rule, on sound saw-timber growing stock.

Table 23.--Net annual growth[1/] of primary growing stock by stand-size class, species group, and survey unit, 1948

Stand-size class	Softwoods		Gum, maple, bay, and magnolia	Other hardwoods	All species
	Yellow pine	Other			
	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Thousand cords
	STATE				
Saw-timber stands	1,312	268	407	182	2,169
Pole-timber stands	1,187	122	216	164	1,689
Other stands	881	7	68	45	1,001
All stands	3,380	397	691	391	4,859
	NORTHEAST				
Saw-timber stands	830	114	187	79	1,210
Pole-timber stands	563	53	92	58	766
Other stands	343	3	24	13	383
All stands	1,736	170	303	150	2,359
	NORTHWEST				
Saw-timber stands	370	20	163	79	632
Pole-timber stands	477	5	82	77	641
Other stands	341	1	21	23	386
All stands	1,188	26	266	179	1,659
	CENTRAL AND SOUTH				
Saw-timber stands	112	134	57	24	327
Pole-timber stands	147	64	42	29	282
Other stands	197	3	23	9	232
All stands	456	201	122	62	841

[1/] Sound wood and bark.

Table 24.--Average growth[1] of saw timber per acre by forest type, stand-size class, and survey unit, 1948

(in board feet)

Forest type	Saw-timber stands				Pole-timber stands			
	State	North-east	North-west	Central and South	State	North-east	North-west	Central and South
Longleaf pine	298	327	287	231	83	108	75	51
Slash pine	317	337	304	238	62	65	60	59
Loblolly pine	388	429	361	231	96	34	142	119
Pond pine	157	158	188	98	30	33	18	41
Sand pine	68	68	--	-	23	18	38	6
Cypress	241	290	173	180	42	58	67	31
Lowland hardwoods	195	181	222	181	67	68	79	49
Upland hardwoods	41	27	53	--	58	35	90	--
Scrub oak	--	--	--	--	--	--	--	-
All types	265	287	267	201	68	76	76	47
	Other stands				All stands			
Longleaf pine	25	24	39	17	56	81	64	28
Slash pine	19	20	26	13	72	137	74	27
Loblolly pine	28	13	19	124	140	152	131	138
Pond pine	21	22	31	9	42	51	40	15
Sand pine	1	—	—	2	9	9	16	2
Cypress	18	20	13	16	117	160	75	79
Lowland hardwoods	24	24	41	12	93	98	121	56
Upland hardwoods	10	12	28	1	18	17	49	1
Scrub oak	3	3	3	4	3	3	3	4
All types	19	20	29	13	65	94	71	32

[1] Applies to timber stands in which no cutting occurred during the year.

Table 25.--Average growth[1] of primary growing stock per acre by forest type, stand-size class, and survey unit, 1948

(in cords)

Forest type	Saw-timber stands				Pole-timber stands			
	State	North-east	North-west	Central and South	State	North-east	North-west	Central and South
Longleaf pine	0.8	0.8	0.8	0.6	0.6	0.6	0.7	0.5
Slash pine	0.9	1.0	1.0	0.6	0.6	0.6	0.7	0.5
Loblolly pine	1.0	1.1	0.9	0.8	0.9	0.4	1.2	0.4
Pond pine	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.5
Sand pine	0.1	0.1	-	--	0.3	0.4	0.1	0.6
Cypress	0.7	0.7	0.4	0.7	0.5	0.5	0.4	0.5
Lowland hardwoods	0.7	0.6	0.8	0.6	0.6	0.6	0.7	0.5
Upland hardwoods	0.3	0.3	0.3	--	0.4	0.2	0.7	--
Scrub oak	--	--	--	--	--	--	--	--
All types	0.8	0.8	0.8	0.6	0.6	0.5	0.7	0.5

Forest type	Other stands				All stands			
Longleaf pine	0.1	0.1	0.2	0.1	0.2	0.3	0.3	0.1
Slash pine	0.1	0.1	0.2	0.1	0.3	0.5	0.4	0.1
Loblolly pine	0.2	0.1	0.2	0.4	0.5	0.5	0.6	0.4
Pond pine	0.1	0.1	0.1	(2/)	0.1	0.2	0.1	0.1
Sand pine	(2/)	(2/)	(2/)	(2/)	0.1	0.1	0.1	(2/)
Cypress	0.1	0.1	0.1	0.1	0.5	0.5	0.3	0.5
Lowland hardwoods	0.2	0.2	0.2	0.1	0.4	0.5	0.6	0.3
Upland hardwoods	(2/)	(2/)	0.2	(2/)	0.1	0.1	0.3	(2/)
Scrub oak	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)	(2/)
All types	0.1	0.1	0.1	0.1	0.3	0.4	0.3	0.2

1/ Sound wood and bark. Applies to stands in which no cutting occurred during the year.

2/ Less than 0.05 cords per acre.

Table 26.--Commodity drain[1] from saw timber by species group and survey unit, 1948

STATE

Commodity	Softwoods		Gum, maple, bay, and magnolia	Other hardwoods	All species	
	Yellow pine	Other				
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Sawlogs[2]	398,231	83,201	23,353	10,003	514,788	54.9
Veneer bolts	14,417	1,105	67,576	2,140	85,238	9.1
Cooperage bolts	10,509	-	51	-	10,560	1.1
Dimension	3,934	176	631	69	4,810	0.5
Pulpwood bolts	219,627	--	215	--	219,842	23.4
Fuel wood	10,398	-	255	2,321	12,974	1.4
Piling	2,884	384	--	385	3,653	0.4
Poles	25,956	18	--	--	25,974	2.8
Posts	-		-	-	--	--
Hewn ties	44,044	6,920	1,018	3,883	55,865	6.0
Miscellaneous[2]	297	1,814	1,249	362	3,722	0.4
All commodities	730,297	93,618	94,348	19,163	937,426	100.0

NORTHEAST

Commodity	Yellow pine	Other	Gum, maple, bay, and magnolia	Other hardwoods	Thousand bd. ft.	Percent
Sawlogs[2]	193,969	14,061	6,813	2,524	217,367	47.3
Veneer bolts	9,039	659	23,804	1,881	35,383	7.7
Cooperage bolts	2,089	-	--	--	2,089	0.4
Dimension	1,581		631	30	2,242	0.5
Pulpwood bolts	130,107	--	181	--	130,288	28.3
Fuel wood	3,703	--	--	688	4,391	1.0
Piling	2,216	92	-	4	2,312	0.5
Poles	18,900	11		--	18,911	4.1
Posts	--	--		--	--	-
Hewn ties	35,881	6,199	21	3,223	45,324	9.9
Miscellaneous[2]	46	1,358	-	79	1,483	0.3
All commodities	397,531	22,380	31,450	8,429	459,790	100.0

[1] Log scale, International 1/4 inch rule.

[2] For lumber, timbers, and sawn ties.

Table 26.--Commodity drain[1] from saw timber by species group and survey unit, 1948 (cont'd.)

NORTHWEST

Commodity	Softwoods		Gum, maple, bay, and magnolia	Other hardwoods	All species	
	Yellow pine	Other				
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent
Sawlogs[2]	84,124	11,921	15,131	6,778	117,954	52.4
Veneer bolts	108	68	22,238	131	22,545	10.0
Cooperage bolts	8,420	--	51	--	8,471	3.8
Dimension	-	-	--	39	39	(4/)
Pulpwood bolts	55,609		32		55,641	24.7
Fuel wood	5,759	-	229	1,633	7,621	3.4
Piling	--	4	--	-	4	(4/)
Poles	6,681	--	-	--	6,681	3.0
Posts	-	--		-	--	--
Hewn ties	2,770	255	750	633	4,408	1.9
Miscellaneous[3]	228	126	1,249	214	1,817	0.8
All commodities	163,699	12,374	39,680	9,428	225,181	100.0

CENTRAL AND SOUTH

Commodity	Yellow pine	Other	Gum, maple, bay, and magnolia	Other hardwoods	Thousand bd. ft.	Percent
Sawlogs[2]	120,138	57,219	1,409	701	179,467	71.1
Veneer bolts	5,270	378	21,534	128	27,310	10.8
Cooperage bolts		--	-	--	--	-
Dimension	2,353	176	--	--	2,529	1.0
Pulpwood bolts	33,911	--	2	--	33,913	13.4
Fuel wood	936	-	26		962	0.4
Piling	668	288	-	381	1,337	0.5
Poles	375	7	-	-	382	0.2
Posts	--	-		-		--
Hewn ties	5,393	466	247	27	6,133	2.4
Miscellaneous[3]	23	330	-	69	422	0.2
All commodities	169,067	58,864	23,218	1,306	252,455	100.0

[3] Products such as handles, shuttle blocks, excelsior, shingles, etc.

[4] Less than 0.05 percent.

Table 27.--Commodity drain[1] from all timber by species group and survey unit, 1948

STATE

Commodity	Softwoods: Yellow pine	Softwoods: Other	Gum, maple, bay, and magnolia	Other hardwoods	All species	
	Standard cords	Standard cords	Standard cords	Standard cords	Standard cords	Percent
Primary Growing Stock						
Sawlogs[2]	766,400	190,200	49,900	21,400	1,027,900	37.9
Veneer bolts	36,600	2,800	187,100	5,900	232,400	8.6
Cooperage bolts	22,300	--	100	-	22,400	0.8
Dimension	9,400	400	1,500	200	11,500	0.4
Pulpwood bolts	1,110,400	-	1,100	--	1,111,500	41.0
Fuel wood	38,000	--	1,200	11,500	50,700	1.9
Piling	8,700	1,100	-	1,300	11,100	0.4
Poles	76,500	100	--	--	76,600	2.8
Posts	1,200	400	300	400	2,300	0.1
Hewn ties	122,700	19,300	2,800	10,800	155,600	5.7
Miscellaneous[3]	1,300	4,300	3,100	1,100	9,800	0.4
All commodities	2,193,500	218,600	247,100	52,600	2,711,800	100.0
Secondary Growing Stock						
All commodities	6,400	16,300	15,400	90,400	128,500	--

NORTHEAST

Commodity	Softwoods: Yellow pine	Softwoods: Other	Gum, maple, bay, and magnolia	Other hardwoods	All species	
Primary Growing Stock						
Sawlogs[2]	373,300	32,100	14,600	5,400	425,400	30.4
Veneer bolts	23,000	1,600	65,900	5,200	95,700	6.8
Cooperage bolts	4,400	--	-		4,400	0.3
Dimension	3,800	--	1,500	100	5,400	0.4
Pulpwood bolts	657,800	--	900	-	658,700	47.0
Fuel wood	13,500	-		3,400	16,900	1.2
Piling	6,700	300	--	(4/)	7,000	0.5
Poles	55,700	100	--	-	55,800	4.0
Posts	700	200	(4/)	300	1,200	0.1
Hewn ties	100,000	17,300	100	8,900	126,300	9.0
Miscellaneous[3]	500	3,300		200	4,000	0.3
All commodities	1,239,400	54,900	83,000	23,500	1,400,800	100.0
Secondary Growing Stock						
All commodities	3,000	7,600	7,100	41,900	59,600	--

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[1] Sound wood and bark.

[2] For lumber, timbers, and sawn ties.

[3] Products such as handles, shuttle blocks, excelsior, shingles, etc.

Table 27.--Commodity drain[1] from all timber by species group and survey unit, 1948 (cont'd.)

NORTHWEST

Commodity	Softwoods		Gum, maple, bay, and magnolia	Other hardwoods	All species	
	Yellow pine	Other				
	Standard cords	Standard cords	Standard cords	Standard cords	Standard cords	Percent
Primary Growing Stock						
Sawlogs[2]	161,900	27,300	32,300	14,500	236,000	35.5
Veneer bolts	200	200	61,600	400	62,400	9.4
Cooperage bolts	17,900	--	100	--	18,000	2.7
Dimension	-		--	100	100	(5/)
Pulpwood bolts	281,100	-	200	-	281,300	42.3
Fuel wood	21,100	--	1,100	8,100	30,300	4.5
Piling	--	(4/)	--	--	(4/)	(5/)
Poles	19,700	--	--	--	19,700	3.0
Posts	200	(4/)	300	100	600	0.1
Hewn ties	7,700	700	2,000	1,800	12,200	1.8
Miscellaneous[3]	800	200	3,100	700	4,800	0.7
All commodities	510,600	28,400	100,700	25,700	665,400	100.0
Secondary Growing Stock						
All commodities	1,500	3,900	3,700	21,700	30,800	--

CENTRAL AND SOUTH

Commodity	Softwoods		Gum, maple, bay, and magnolia	Other hardwoods	All species	
	Yellow pine	Other				
	Standard cords	Standard cords	Standard cords	Standard cords	Standard cords	Percent
Primary Growing Stock						
Sawlogs[2]	231,200	130,800	3,000	1,500	366,500	56.8
Veneer bolts	13,400	1,000	59,600	300	74,300	11.5
Cooperage bolts	--	--	--	--	-	--
Dimension	5,600	400	-	--	6,000	0.9
Pulpwood bolts	171,500	-	(4/)		171,500	26.6
Fuel wood	3,400	--	100	--	3,500	0.5
Piling	2,000	800	--	1,300	4,100	0.6
Poles	1,100	(4/)		--	1,100	0.2
Posts	300	200	--	(4/)	500	0.1
Hewn ties	15,000	1,300	700	100	17,100	2.6
Miscellaneous[3]	(4/)	800	--	200	1,000	0.2
All commodities	443,500	135,300	63,400	3,400	645,600	100.0
Secondary Growing Stock						
All commodities	1,900	4,800	4,600	26,800	38,100	--

[4] Less than 50 cords.

[5] Less than 0.05 percent.

Table 28.--Net change[1] in saw-timber growing stock by species group and survey unit, 1948

STATE

Item	Softwoods		Gum, maple, bay, and magnolia	Other hardwoods	Total
	Yellow pine	Other			
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.
Growing stock, Jan. 1, 1948	12,584,000	3,181,700	3,052,000	1,588,400	20,406,100
Net growth	836,800	98,100	124,000	66,400	1,125,300
Commodity drain	730,300	93,600	94,300	19,200	937,400
Net change	+106,500	+4,500	+29,700	+47,200	+187,900
Growing stock, Jan. 1, 1949	12,690,500	3,186,200	3,081,700	1,635,600	20,594,000
Percent change	+0.8	+0.1	+1.0	+3.0	+0.9

NORTHEAST

Item	Yellow pine	Other softwoods	Gum, maple, bay, and magnolia	Other hardwoods	Total
Growing stock, Jan. 1, 1948	6,565,200	1,630,600	1,191,000	547,500	9,934,300
Net growth	471,500	46,900	46,700	24,200	589,300
Commodity drain	397,600	22,300	31,400	8,500	459,800
Net change	+73,900	+24,600	+15,300	+15,700	+129,500
Growing stock, Jan. 1, 1949	6,639,100	1,655,200	1,206,300	563,200	10,063,800
Percent change	+1.1	+1.5	+1.3	+2.9	+1.3

Table 28.--Net change[1] in saw-timber growing stock by species group and survey unit, 1948 (cont'd.)

NORTHWEST

Item	Softwoods: Yellow pine	Softwoods: Other	Gum, maple, bay, and magnolia	Other hardwoods	Total
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.
Growing stock, Jan. 1, 1948	3,726,800	369,800	1,330,300	778,200	6,205,100
Net growth	259,800	11,700	54,500	32,000	358,000
Commodity drain	163,700	12,400	39,700	9,400	225,200
Net change	+96,100	-700	+14,800	+22,600	+132,800
Growing stock, Jan. 1, 1949	3,822,900	369,100	1,345,100	800,800	6,337,900
Percent change	+2.6	-0.2	+1.1	+2.9	+2.1

CENTRAL AND SOUTH

Item	Softwoods: Yellow pine	Softwoods: Other	Gum, maple, bay, and magnolia	Other hardwoods	Total
Growing stock, Jan. 1, 1948	2,292,000	1,181,300	530,700	262,700	4,266,700
Net growth	105,500	39,500	22,800	10,200	178,000
Commodity drain	169,000	58,900	23,200	1,300	252,400
Net change	-63,500	-19,400	-400	+8,900	-74,400
Growing stock, Jan. 1, 1949	2,228,500	1,161,900	530,300	271,600	4,192,300
Percent change	-2.8	-1.6	-0.1	+3.4	-1.7

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[1] Log scale, International 1/4-inch rule on sound saw-timber growing stock.

Table 29.--Net change in primary growing stock by species group and survey unit, 1948

STATE

Item	Softwoods		Gum, maple, bay, and magnolia	Other hardwoods	Total
	Yellow pine	Other			
	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Thousand cords
Growing stock, Jan. 1, 1948	57,481	15,658	18,033	8,945	100,117
Net growth:					
On trees 5.0" and larger, Jan. 1, 1948	2,952	293	544	289	4,078
Trees recruiting to 5.0" in 1948	428	104	147	102	781
Total	3,380	397	691	391	4,859
Commodity drain	2,193	219	247	53	2,712
Net change	+1,187	+178	+444	+338	+2,147
Growing stock, Jan. 1, 1949	58,668	15,836	18,477	9,283	102,264
Percent change	+2.1	+1.1	+2.5	+3.8	+2.1

NORTHEAST

Item	Yellow pine	Other	Gum, maple, bay, and magnolia	Other hardwoods	Total
Growing stock, Jan. 1, 1948	28,459	7,345	7,341	3,540	46,685
Net growth:					
On trees 5.0" and larger, Jan. 1, 1948	1,547	127	236	114	2,024
Trees recruiting to 5.0" in 1948	189	43	67	36	335
Total	1,736	170	303	150	2,359
Commodity drain	1,239	55	83	24	1,401
Net change	+497	+115	+220	+126	+958
Growing stock, Jan. 1, 1949	28,956	7,460	7,561	3,666	47,643
Percent change	+1.7	+1.6	+3.0	+3.6	+2.1

Table 29.--Net change in primary growing stock by species group and survey unit, 1948 (cont'd.)

NORTHWEST

Item	Softwoods		Gum, maple, bay, and magnolia	Other hardwoods	Total
	Yellow pine	Other			
	Thousand cords	Thousand cords	Thousand cords	Thousand cords	Thousand cords
Growing stock, Jan. 1, 1948	18,113	1,365	7,678	3,881	31,037
Net growth:					
On trees 5.0" and larger Jan. 1, 1948	1,011	20	213	130	1,374
Trees recruiting to 5.0" in 1948	177	6	53	49	285
Total	1,188	26	266	179	1,659
Commodity drain	510	28	101	26	665
Net change	+678	-2	+165	+153	+994
Growing stock, Jan. 1, 1949	18,791	1,363	7,843	4,034	32,031
Percent change	+3.7	-0.1	+2.1	+3.9	+3.2

CENTRAL AND SOUTH

Item	Yellow pine	Other	Gum, maple, bay, and magnolia	Other hardwoods	Total
Growing stock, Jan. 1, 1948	10,909	6,948	3,014	1,524	22,395
Net growth:					
On trees 5.0" and larger Jan. 1, 1948	394	146	95	45	680
Trees recruiting to 5.0" in 1948	62	55	27	17	161
Total	456	201	122	62	841
Commodity drain	444	136	63	3	646
Net change	+12	+65	+59	+59	+195
Growing stock, Jan. 1, 1949	10,921	7,013	3,073	1,583	22,590
Percent change	+0.1	+0.9	[illegible]	+3.9	+0.9

Table 30.--County area by broad use class, 1949

County	Total area[1]	Non-forest area		Forest land		
		Land	Water	Non-commercial[2]	Commercial	
	Acres	Acres	Acres	Acres	Acres	Percent
Alachua	615,000	207,000	37,700	300	370,000	64.1
Baker	376,300	18,900	1,100	--	356,300	95.0
Bay	551,000	50,600	60,700	11,200	428,500	87.4
Bradford	195,200	43,400	7,500	--	144,300	76.9
Brevard	839,000	373,500	190,500	37,100	237,900	36.7
Broward	780,800	666,800	2,600	63,200	48,200	6.2
Calhoun	362,900	32,700	1,700	--	328,500	90.9
Charlotte	532,500	86,800	88,600	47,500	309,600	69.7
Citrus	423,100	59,200	50,000	3,700	310,200	83.1
Clay	412,100	32,700	29,100	1,000	349,300	91.2
Collier	1,356,100	302,000	92,000	300,500	661,600	52.3
Columbia	505,000	107,600	4,100	1,200	392,100	78.3
Dade	1,349,800	1,113,900	19,700	141,900	74,300	5.6
De Soto	416,600	242,000	3,700	17,400	153,500	37.2
Dixie	453,800	49,800	9,100	--	394,900	88.8
Duval	537,600	133,800	56,200	1,400	346,200	71.9
Escambia	491,500	101,000	41,600	2,900	346,000	76.9
Flagler	322,600	20,700	17,000	1,700	283,200	92.7
Franklin	361,600	29,800	16,500	21,800	293,500	85.0
Gadsden	334,700	100,800	6,000	3,200	224,700	68.4
Gilchrist	222,700	69,000	4,100	--	149,600	68.4
Glades	574,700	360,700	4,400	65,900	143,700	25.2
Gulf	369,900	31,600	7,500	7,500	323,300	89.2
Hamilton	329,600	59,100	3,500	1,300	265,700	81.5
Hardee	403,200	113,000	6,800	2,800	280,600	70.8
Hendry	761,000	465,500	2,600	71,800	221,100	29.2
Hernando	325,100	45,000	16,200	1,700	262,200	84.9
Highlands	716,200	331,800	56,800	24,800	302,800	45.9
Hillsborough	679,700	233,100	22,300	8,800	415,500	63.2
Holmes	309,800	83,900	2,000	--	223,900	72.7
Indian River	350,700	211,500	20,100	20,800	98,300	29.7
Jackson	606,700	261,800	8,300	900	335,700	56.1
Jefferson	389,800	96,500	4,300	--	289,000	75.0
Lafayette	352,600	58,100	4,300	--	290,200	83.3
Lake	744,300	177,900	143,200	29,500	393,700	65.5
Lee	643,200	81,200	99,300	86,700	376,000	69.1
Leon	445,500	94,700	16,300	100	334,400	77.9
Levy	727,700	155,400	37,100	800	534,400	77.4
Liberty	540,800	6,500	3,100	16,800	514,400	95.7
Madison	453,100	143,600	6,000	(3/)	303,500	67.9
Manatee	502,400	153,300	40,600	3,100	305,400	66.1
Marion	1,057,300	223,400	41,700	--	792,200	78.0
Martin	372,400	103,900	37,700	22,900	207,900	62.1
Monroe	907,500	388,400	271,400	243,200	4,500	0.7
Nassau	429,400	49,400	15,200	1,500	363,300	87.7
Okaloosa	634,900	77,800	40,500	6,600	510,000	85.8
Okeechobee	499,200	325,300	61,000	8,600	104,300	23.8
Orange	641,900	115,800	63,900	12,200	450,000	77.9
Osceola	938,900	358,900	88,600	7,100	484,300	57.0
Palm Beach	1,649,900	970,900	455,500	96,200	127,300	10.7
Pasco	494,100	98,900	36,100	9,100	350,000	76.4
Pinellas	197,800	81,400	37,900	3,400	75,100	47.0
Polk	1,310,700	403,700	113,200	22,800	771,000	64.4
Putnam	562,600	50,000	65,300	--	447,300	89.9
St. Johns	422,400	53,400	43,800	1,400	323,800	85.5
St. Lucie	400,600	184,000	54,400	--	162,200	46.9
Santa Rosa	737,300	95,400	72,600	6,400	562,900	84.7
Sarasota	396,800	143,000	37,100	8,100	208,600	58.0
Seminole	225,300	65,300	26,100	--	133,900	67.2
Sumter	367,400	83,200	25,500	11,000	247,700	72.4
Suwannee	439,700	180,000	7,200	700	251,800	58.2
Taylor	673,300	48,200	15,700	18,300	591,100	89.9
Union	156,800	27,000	2,100	--	127,700	82.5
Volusia	772,500	101,400	83,900	62,400	524,800	76.2
Wakulla	406,400	42,400	14,900	50,200	298,900	76.3
Walton	726,400	82,800	31,900	4,500	607,200	87.4
Washington	391,000	71,500	12,400	--	307,100	81.1
Total	37,478,400	11,431,600	2,999,800	1,595,900	21,451,100	62.2

[1] Gross area from Bureau of the Census.

[2] Non-productive forest land plus forest land withdrawn from commercial use.

[3] Less than 50 acres.

Table 31.--Ownership of commercial forest land by county, 1949

County	Private		Public					
			National forest	Other federal	State	County, city, town	Total public	
	Acres	Percent	Acres	Acres	Acres	Acres	Acres	Percent
Alachua	362,600	98.0	--	500	5,700	1,200	7,400	2.0
Baker	278,100	78.1	77,500	500	200	--	78,200	21.9
Bay	398,800	93.1	--	21,300	8,000	400	29,700	6.9
Bradford	133,000	92.2	--	300	11,000	--	11,300	7.8
Brevard	227,900	95.8	--	1,200	5,300	3,500	10,000	4.2
Broward	32,400	67.2	--	400	14,500	900	15,800	32.8
Calhoun	328,200	99.9	--	100	100	100	300	0.1
Charlotte	260,800	84.2	--	200	47,000	1,600	48,800	15.8
Citrus	267,500	86.2	--	40,700	2,000	--	42,700	13.8
Clay	282,500	80.9	--	42,700	24,100	(1/)	66,800	19.1
Collier	651,700	98.5	--	400	9,500	--	9,900	1.5
Columbia	313,900	80.1	76,200	400	1,300	300	78,200	19.9
Dade	60,400	81.3	--	200	13,200	500	13,900	18.7
De Soto	152,700	99.5	--	100	500	200	800	0.5
Dixie	393,700	99.7	--	400	700	100	1,200	0.3
Duval	330,900	95.6	--	12,200	1,400	1,700	15,300	4.4
Escambia	345,000	99.7	--	600	--	400	1,000	0.3
Flagler	282,100	99.6	--	300	500	300	1,100	0.4
Franklin	271,900	92.6	21,400	--	200	--	21,600	7.4
Gadsden	223,200	99.3	--	100	1,300	100	1,500	0.7
Gilchrist	148,800	99.5	--	500	300	--	800	0.5
Glades	137,300	95.5	--	6,100	300	--	6,400	4.5
Gulf	321,100	99.3	--	2,200	(1/)	--	2,200	0.7
Hamilton	265,300	99.8	--	400	(1/)	(1/)	400	0.2
Hardee	279,600	99.6	--	--	1,000	(1/)	1,000	0.4
Hendry	187,900	85.0	--	30,000	3,200	--	33,200	15.0
Hernando	223,500	85.2	--	36,600	600	1,500	38,700	14.8
Highlands	272,400	90.0	--	26,400	3,000	1,000	30,400	10.0
Hillsborough	412,300	99.2	--	1,200	--	2,000	3,200	0.8
Holmes	238,700	99.5	--	300	600	300	1,200	0.5
Indian River	91,100	92.7	--	600	4,500	2,100	7,200	7.3
Jackson	331,800	98.8	--	400	3,300	200	3,900	1.2
Jefferson	282,900	97.9	--	4,400	1,500	200	6,100	2.1
Lafayette	289,600	99.8	--	300	300	--	600	0.2
Lake	319,700	81.2	65,500	1,000	3,300	4,200	74,000	18.8
Lee	368,300	98.0	--	1,800	1,300	4,600	7,700	2.0
Leon	232,700	69.6	100,600	500	100	500	101,700	30.4
Levy	532,900	99.7	--	900	500	100	1,500	0.3
Liberty	249,600	48.5	263,000	300	800	700	264,800	51.5
Madison	303,200	99.9	--	100	200	--	300	0.1
Manatee	297,800	97.5	--	100	7,400	100	7,600	2.5
Marion	541,700	68.4	241,700	3,800	4,700	300	250,500	31.6
Martin	204,900	98.6	--	--	2,900	100	3,000	1.4
Monroe	4,500	100.0	--	--	--	--	--	--
Nassau	358,600	98.7	--	(1/)	3,400	1,300	4,700	1.3
Okaloosa	242,800	47.6	--	264,000	3,200	(1/)	267,200	52.4
Okeechobee	103,400	99.1	--	(1/)	600	300	900	0.9
Orange	448,200	99.6	--	400	900	500	1,800	0.4
Osceola	483,300	99.8	--	100	500	400	1,000	0.2
Palm Beach	111,500	87.6	--	1,600	900	13,300	15,800	12.4
Pasco	342,700	97.9	--	6,800	400	100	7,300	2.1
Pinellas	74,000	98.5	--	200	200	700	1,100	1.5
Polk	745,600	96.7	--	21,600	100	3,700	25,400	3.3
Putnam	414,800	92.7	21,900	3,400	6,600	600	32,500	7.3
St. Johns	321,800	99.4	--	700	1,000	300	2,000	0.6
St. Lucie	160,400	98.9	--	--	1,000	800	1,800	1.1
Santa Rosa	389,300	69.2	--	171,800	700	1,100	173,600	30.8
Sarasota	204,000	97.8	--	100	4,100	400	4,600	2.2
Seminole	131,500	98.2	--	600	400	1,400	2,400	1.8
Sumter	214,100	86.4	--	32,700	900	--	33,600	13.6
Suwannee	251,600	99.9	--	200	--	--	200	0.1
Taylor	589,900	99.8	--	200	900	100	1,200	0.2
Union	121,800	95.4	--	800	5,100	--	5,900	4.6
Volusia	520,000	99.1	--	800	2,600	1,400	4,800	0.9
Wakulla	97,900	32.8	157,700	43,200	100	--	201,000	67.2
Walton	440,900	72.6	--	165,700	600	--	166,300	27.4
Washington	304,000	99.0	--	300	2,800	--	3,100	1.0
Total	19,191,000	89.5	1,025,500	955,700	223,300	55,600	2,260,100	10.5

1/ Less than 50 acres.

Table 32.--Net volume[1] of saw timber by county and species group, 1949

(in thousand board feet)

County	Softwoods[2]	Gum, maple, bay and magnolia[3]	Other hardwoods	All species
Alachua	499,000	83,700	81,000	663,700
Baker	706,400	50,100	1,000	757,500
Bay	157,100	18,300	13,700	189,100
Bradford	250,500	9,400	2,100	262,000
Brevard	88,700	1,500	700	90,900
Broward	9,300	--	--	9,300
Calhoun	100,600	67,100	107,300	275,000
Charlotte	54,200	--	--	54,200
Citrus	195,800	76,200	21,400	293,400
Clay	255,800	54,700	13,500	324,000
Collier	442,500	--	--	442,500
Columbia	599,800	46,000	25,700	671,500
Dade	30,400	--	--	30,400
De Soto	50,000	3,600	400	54,000
Dixie	290,300	90,700	77,600	458,600
Duval	257,600	89,200	27,300	374,100
Escambia	262,400	34,100	9,900	306,400
Flagler	471,000	44,400	7,100	522,500
Franklin	153,200	137,600	4,900	295,700
Gadsden	162,100	61,500	33,000	256,600
Gilchrist	135,100	600	5,900	141,600
Glades	74,700	400	--	75,100
Gulf	220,800	71,100	26,300	318,200
Hamilton	356,100	37,300	10,400	403,800
Hardee	61,600	35,900	14,300	111,800
Hendry	128,100	--	--	128,100
Hernando	139,700	53,600	55,500	248,800
Highlands	68,800	26,500	--	95,300
Hillsborough	181,100	27,700	45,100	253,900
Holmes	111,500	83,600	84,800	279,900
Indian River	56,500	1,200	--	57,700
Jackson	197,700	124,500	122,700	444,900
Jefferson	309,200	231,800	79,900	620,900
Lafayette	489,700	16,600	13,300	519,600
Lake	191,900	49,400	9,800	251,100
Lee	60,500	--	--	60,500
Leon	426,500	83,500	36,300	546,300
Levy	617,700	86,400	96,000	800,100
Liberty	508,500	177,100	113,900	799,500
Madison	372,600	74,900	13,900	461,400
Manatee	74,800	33,400	1,700	109,900
Marion	563,800	65,100	61,700	690,600
Martin	20,300	1,500	--	21,800
Monroe	5,200	--	--	5,200
Nassau	348,700	96,000	35,000	479,700
Okaloosa	384,200	31,200	10,200	425,600
Okeechobee	94,400	9,000	4,100	107,500
Orange	256,100	20,000	5,900	282,000
Osceola	174,700	32,500	2,600	209,800
Palm Beach	38,200	--	--	38,200
Pasco	130,500	19,300	18,900	168,700
Pinellas	29,600	--	--	29,600
Polk	342,400	47,800	19,000	409,200
Putnam	382,100	91,700	8,600	482,400
St. Johns	314,700	66,000	16,500	397,200
St. Lucie	81,700	7,300	--	89,000
Santa Rosa	552,200	54,300	34,100	640,600
Sarasota	99,900	100	--	100,000
Seminole	59,700	42,000	17,400	119,100
Sumter	149,100	41,400	54,800	245,300
Suwannee	175,800	31,600	5,800	213,200
Taylor	529,700	54,500	38,900	623,100
Union	252,900	59,300	5,600	317,800
Volusia	425,000	58,100	16,300	499,400
Wakulla	321,400	23,300	30,000	374,700
Walton	205,600	94,400	47,600	347,600
Washington	119,000	51,700	46,200	216,900
Total	15,876,700	3,081,700	1,635,600	20,594,000

[1] Log scale, International 1/4-inch rule.

[2] Includes pine, cypress, and cedar.

[3] Includes other soft-textured hardwoods.

Table 33.--**Net volume[1] of saw timber by county, species group, and diameter-class group, 1949**

County	Softwoods		Hardwoods		All species	
	9-14 inches	15+ inches	11-16 inches	17+ inches	Soft-woods	Hard-woods
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Percent	Percent
Alachua	459,200	39,800	114,700	50,000	75.2	24.8
Baker	609,900	96,500	30,400	20,700	93.3	6.7
Bay	110,300	46,800	29,900	2,100	83.1	16.9
Bradford	225,000	25,500	9,300	2,200	95.6	4.4
Brevard	80,700	8,000	400	1,800	97.6	2.4
Broward	9,300	--	--	--	100.0	--
Calhoun	92,200	8,400	115,800	58,600	36.6	63.4
Charlotte	32,600	21,600	--	--	100.0	--
Citrus	177,900	17,900	51,100	46,500	66.7	33.3
Clay	225,400	30,400	32,300	35,900	79.0	21.0
Collier	346,100	96,400	--	--	100.0	--
Columbia	533,700	66,100	49,300	22,400	89.3	10.7
Dade	30,400	--	--	--	100.0	--
De Soto	48,700	1,300	4,000	--	92.6	7.4
Dixie	283,500	6,800	106,400	61,900	63.3	36.7
Duval	218,900	38,700	79,200	37,300	68.9	31.1
Escambia	255,500	6,900	27,100	16,900	85.6	14.4
Flagler	421,500	49,500	36,000	15,500	90.1	9.9
Franklin	124,600	28,600	123,600	18,900	51.8	48.2
Gadsden	112,100	50,000	77,600	16,900	63.2	36.8
Gilchrist	121,700	13,400	4,000	2,500	95.4	4.6
Glades	73,400	1,300	400	--	99.5	0.5
Gulf	169,700	51,100	56,200	41,200	69.4	30.6
Hamilton	326,800	29,300	42,000	5,700	88.2	11.8
Hardee	57,900	3,700	18,300	31,900	55.1	44.9
Hendry	86,900	41,200	--	--	100.0	--
Hernando	124,300	15,400	60,600	48,500	56.1	43.9
Highlands	59,500	9,300	16,100	10,400	72.2	27.8
Hillsborough	172,200	8,900	42,500	30,300	71.3	28.7
Holmes	87,500	24,000	109,400	59,000	39.8	60.2
Indian River	54,800	1,700	1,200	--	97.9	2.1
Jackson	144,000	53,700	156,700	90,500	44.4	55.6
Jefferson	242,700	66,500	216,800	94,900	49.8	50.2
Lafayette	460,900	28,800	18,300	11,600	94.2	5.8
Lake	156,500	35,400	43,300	16,000	76.4	23.6
Lee	48,800	11,700	--	--	100.0	--
Leon	319,700	106,800	46,600	73,200	78.1	21.9
Levy	531,800	85,900	129,100	53,300	77.2	22.8
Liberty	314,400	194,100	158,000	133,000	63.6	36.4
Madison	332,200	40,400	76,700	12,100	80.8	19.2
Manatee	45,500	29,300	23,900	11,200	68.1	31.9
Marion	455,100	108,700	84,400	42,400	81.6	18.4
Martin	20,300	--	1,500	--	93.1	6.9
Monroe	5,200	--	--	--	100.0	--
Nassau	322,200	26,500	102,800	28,100	72.7	27.3
Okaloosa	283,900	100,300	19,500	21,900	90.3	9.7
Okeechobee	84,800	9,600	5,100	8,000	87.8	12.2
Orange	192,800	63,300	22,300	3,600	90.8	9.2
Osceola	161,700	13,000	29,600	5,500	83.3	16.7
Palm Beach	38,200	--	--	--	100.0	--
Pasco	129,500	1,000	16,300	21,900	77.4	22.6
Pinellas	20,700	8,900	--	--	100.0	--
Polk	311,200	31,200	46,700	20,100	83.7	16.3
Putnam	281,800	100,300	79,700	20,600	79.2	20.8
St. Johns	253,400	61,300	49,600	32,900	79.2	20.8
St. Lucie	77,700	4,000	7,300	--	91.8	8.2
Santa Rosa	434,000	118,200	46,200	42,200	86.2	13.8
Sarasota	87,200	12,700	100	--	99.9	0.1
Seminole	44,000	15,700	46,800	12,600	50.1	49.9
Sumter	131,000	18,100	57,400	38,800	60.8	39.2
Suwannee	132,900	42,900	28,300	9,100	82.5	17.5
Taylor	489,000	40,700	61,900	31,500	85.0	15.0
Union	220,100	32,800	40,200	24,700	79.6	20.4
Volusia	355,200	69,800	54,700	19,700	85.1	14.9
Wakulla	293,600	27,800	46,000	7,300	85.8	14.2
Walton	142,300	63,300	108,600	33,400	59.1	40.9
Washington	113,000	6,000	62,400	35,500	54.9	45.1
Total	13,409,500	2,467,200	3,124,500	1,592,800	77.1	22.9

[1] Log scale, International 1/4-inch rule.

Table 34.--Net volume[1] of all timber by county, pulping species group, and tree diameter group, 1949

PRIMARY GROWING STOCK (in thousand cords)

County	Yellow pines		Gum, maple, bay and magnolia[2]		Other species		All species
	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	
Alachua	1,582	361	207	173	273	205	2,801
Baker	2,020	424	183	111	427	102	3,267
Bay	1,077	122	186	30	161	40	1,616
Bradford	889	96	42	16	198	55	1,296
Brevard	364	26	3	4	18	2	417
Broward	40	--	--	--	9	--	49
Calhoun	399	20	241	118	259	244	1,281
Charlotte	87	62	--	--	73	10	232
Citrus	484	89	108	167	277	128	1,253
Clay	948	249	106	122	137	14	1,576
Collier	416	100	12	--	1,266	310	2,104
Columbia	2,090	345	514	81	448	109	3,587
Dade	267	--	--	--	--	--	267
De Soto	187	2	53	--	151	15	408
Dixie	772	101	454	165	730	254	2,476
Duval	794	161	221	176	271	74	1,697
Escambia	1,626	79	204	62	64	14	2,049
Flagler	987	194	231	80	872	164	2,528
Franklin	594	143	248	285	111	16	1,397
Gadsden	498	207	350	103	146	61	1,365
Gilchrist	223	71	9	--	225	42	570
Glades	171	4	--	1	187	14	377
Gulf	845	31	119	169	221	183	1,568
Hamilton	1,228	115	281	52	304	23	2,003
Hardee	332	21	151	78	55	38	675
Hendry	285	138	--	--	186	11	620
Hernando	278	98	159	96	350	141	1,122
Highlands	392	31	133	50	68	--	674
Hillsborough	574	48	86	51	291	131	1,181
Holmes	521	87	357	174	200	181	1,520
Indian River	149	13	6	--	64	17	249
Jackson	740	177	710	202	431	245	2,505
Jefferson	783	229	657	458	384	192	2,703
Lafayette	974	417	103	34	339	56	1,923
Lake	546	153	150	104	412	48	1,413
Lee	225	26	1	--	350	9	611
Leon	1,159	483	260	182	138	82	2,304
Levy	1,482	293	402	158	1,332	319	3,986
Liberty	1,319	443	463	377	413	380	3,395
Madison	782	237	425	115	535	58	2,152
Manatee	341	71	44	70	14	4	544
Marion	1,770	607	215	129	171	141	3,033
Martin	167	--	12	2	15	--	196
Monroe	1	--	--	--	52	3	56
Nassau	1,399	276	357	191	255	77	2,555
Okaloosa	704	628	161	67	47	23	1,630
Okeechobee	346	13	40	15	122	64	600
Orange	525	213	152	42	524	59	1,515
Osceola	424	24	172	44	645	97	1,406
Palm Beach	274	22	--	--	18	--	314
Pasco	449	25	65	36	349	52	976
Pinellas	69	32	--	--	17	1	119
Polk	1,010	151	280	89	810	110	2,450
Putnam	1,103	344	326	191	288	56	2,308
St. Johns	873	275	197	155	187	78	1,765
St. Lucie	187	38	75	9	169	44	522
Santa Rosa	2,215	395	181	105	153	127	3,176
Sarasota	201	125	--	--	1	--	327
Seminole	109	46	135	65	127	49	531
Sumter	375	75	225	88	479	140	1,382
Suwannee	536	183	100	56	65	19	959
Taylor	1,805	303	357	112	648	122	3,347
Union	632	136	205	121	182	47	1,323
Volusia	679	200	292	96	1,026	198	2,491
Wakulla	1,267	231	141	22	161	55	1,877
Walton	1,022	204	724	121	170	143	2,384
Washington	489	54	296	70	257	95	1,261
Total	48,101	10,567	12,587	5,890	19,328	5,791	102,264

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[1] Sound wood and bark, excluding volume of palms. Limbs of sound sawlog-size hardwoods are included in secondary growing stock volumes.

[2] Includes other soft-textured hardwoods.

Table 34.--Net volume[1] of all timber by county, pulping species group, and tree diameter group, 1949 (cont'd.)

SECONDARY GROWING STOCK (in thousand cords)

County	Yellow pines		Gum, maple, bay and magnolia[2]		Other species		All species
	5-12 inches	13+ inches	5-12 inches	13+ inches	5-12 inches	13+ inches	
Alachua	34	--	123	180	308	364	1,009
Baker	46	22	143	65	57	8	341
Bay	18	3	33	34	70	8	166
Bradford	7	4	60	19	84	21	195
Brevard	20	4	--	4	63	35	126
Broward	6	--	--	--	5	1	12
Calhoun	11	--	49	84	323	242	709
Charlotte	--	4	--	--	34	23	61
Citrus	2	--	61	71	444	369	947
Clay	1	11	91	158	313	204	778
Collier	--	--	51	--	606	206	863
Columbia	9	2	153	95	187	139	585
Dade	--	--	--	--	--	--	--
De Soto	--	--	55	9	140	45	249
Dixie	3	--	210	186	486	566	1,451
Duval	1	9	146	191	152	229	728
Escambia	2	6	113	86	285	10	502
Flagler	22	24	76	45	108	134	409
Franklin	12	26	66	306	70	8	488
Gadsden	9	--	316	205	177	200	907
Gilchrist	3	--	19	--	342	84	448
Glades	--	--	--	--	23	12	35
Gulf	16	--	214	487	148	120	985
Hamilton	25	16	108	94	207	131	581
Hardee	4	--	27	25	118	77	251
Hendry	7	9	4	--	58	40	118
Hernando	--	--	94	68	454	211	827
Highlands	10	--	69	23	14	11	127
Hillsborough	16	--	59	24	334	247	680
Holmes	3	--	99	95	66	118	381
Indian River	1	--	10	--	93	13	117
Jackson	19	2	265	258	304	354	1,202
Jefferson	28	9	232	337	156	255	1,017
Lafayette	6	--	42	6	156	36	246
Lake	82	33	169	127	459	230	1,100
Lee	6	--	--	--	125	8	139
Leon	8	6	94	95	154	170	527
Levy	4	8	128	180	462	618	1,400
Liberty	11	--	196	399	344	265	1,215
Madison	23	20	173	106	405	201	928
Manatee	8	--	30	25	74	63	200
Marion	100	9	130	196	530	555	1,520
Martin	10	--	32	--	116	8	166
Monroe	--	--	--	--	4	1	5
Nassau	8	4	210	152	207	321	902
Okaloosa	68	--	157	311	199	45	780
Okeechobee	1	--	34	22	26	34	117
Orange	1	--	139	79	467	32	718
Osceola	13	--	188	110	328	395	1,034
Palm Beach	3	--	--	--	20	--	23
Pasco	--	--	59	33	338	103	533
Pinellas	1	--	--	--	8	14	23
Polk	52	--	253	73	376	116	870
Putnam	3	18	193	286	591	206	1,297
St. Johns	23	16	151	157	210	133	690
St. Lucie	25	--	56	8	13	40	142
Santa Rosa	4	4	168	163	[illegible]	87	[illegible]
Sarasota	5	18	4	1	51	40	119
Seminole	13	--	43	[illegible]	143	146	[illegible]
Sumter	6	--	333	[illegible]	[illegible]	[illegible]	[illegible]
Suwannee	5	--	35	67	408	[illegible]	[illegible]
Taylor	52	30	175	145	419	281	1,102
Union	8	4	66	84	46	32	240
Volusia	70	29	229	107	447	291	1,173
Wakulla	34	--	61	70	239	188	592
Walton	37	8	412	314	316	160	1,247
Washington	--	--	172	254	196	106	728
Total	1,025	358	7,078	6,928	14,864	9,962	40,215

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[1] Sound wood and bark, excluding volume of palms. Limbs of sound sawlog-size hardwoods are included in secondary growing stock volumes.

[2] Includes other soft-textured hardwoods.

Table 35.--Commodity drain from primary growing stock by county and species group, 1948

County	Saw timber			All sound trees five inches d.b.h. and larger		
	Softwoods	Hardwoods	Total	Softwoods	Hardwoods	Total
	Thousand bd. ft.	Thousand bd. ft.	Thousand bd. ft.	Cords	Cords	Cords
Alachua	32,442	4,420	36,862	95,500	12,300	107,800
Baker	18,885	273	19,158	61,900	800	62,700
Bay	4,722	66	4,788	19,600	300	19,900
Bradford	12,388	569	12,957	50,000	1,600	51,600
Brevard	3,792	1	3,793	9,400	(2/)	9,400
Broward	353	(1/)	353	800	(2/)	800
Calhoun	6,578	6,626	13,204	22,800	17,900	40,700
Charlotte	823	(1/)	823	1,700	(2/)	1,700
Citrus	4,035	1,087	5,122	11,900	2,900	14,800
Clay	12,565	1,925	14,490	39,300	4,700	44,000
Collier	44,950	(1/)	44,950	101,100	(2/)	101,100
Columbia	18,010	2,682	20,692	56,400	7,300	63,700
Dade	1,600	1	1,601	3,800	(2/)	3,800
De Soto	4,869	626	5,495	12,000	1,700	13,700
Dixie	3,866	1,316	5,182	10,300	3,700	14,000
Duval	31,186	1,070	32,256	102,200	3,000	105,200
Escambia	18,147	2,288	20,435	60,600	5,600	66,200
Flagler	7,436	7	7,443	29,200	(2/)	29,200
Franklin	4,103	28	4,131	10,800	100	10,900
Gadsden	12,671	7,386	20,057	36,600	17,200	53,800
Gilchrist	7,756	290	8,046	22,200	800	23,000
Glades	164	(1/)	164	400	(2/)	400
Gulf	15,667	2,143	17,810	37,400	4,800	42,200
Hamilton	12,384	649	13,033	40,200	1,900	42,100
Hardee	8,243	1,059	9,302	25,400	2,700	28,100
Hendry	949	(1/)	949	1,900	(2/)	1,900
Hernando	12,605	2,021	14,626	31,500	5,200	36,700
Highlands	1,067	(1/)	1,067	3,100	(2/)	3,100
Hillsborough	16,231	11,172	27,403	45,200	30,900	76,100
Holmes	17,987	2,476	20,463	45,900	6,300	52,200
Indian River	1,093	1	1,094	3,700	(2/)	3,700
Jackson	14,478	7,467	21,945	45,200	18,900	64,100
Jefferson	10,074	5,554	15,628	26,000	15,500	41,500
Lafayette	24,944	112	25,056	58,100	300	58,400
Lake	18,904	662	19,566	55,900	2,000	57,900
Lee	2,280	(1/)	2,280	5,900	(2/)	5,900
Leon	6,969	2,177	9,146	21,600	6,100	27,700
Levy	25,473	5,945	31,418	67,500	14,600	82,100
Liberty	11,996	4,511	16,507	36,400	10,700	47,100
Madison	19,836	4,644	24,480	55,700	12,900	68,600
Manatee	2,417	110	2,527	6,200	300	6,500
Marion	46,447	5,332	51,779	158,100	14,700	172,800
Martin	856	(1/)	856	1,700	(2/)	1,700
Monroe	36	4	40	100	(2/)	100
Nassau	21,479	559	22,038	70,100	1,600	71,700
Okaloosa	13,839	1,012	14,851	47,000	2,900	49,900
Okeechobee	3,140	(1/)	3,140	7,500	(2/)	7,500
Orange	6,619	419	7,038	19,900	1,200	21,100
Osceola	22,754	384	23,138	52,700	900	53,600
Palm Beach	2,585	1	2,586	5,100	(2/)	5,100
Pasco	22,468	4,434	26,902	53,300	12,100	65,400
Pinellas	2,250	1	2,251	5,200	(2/)	5,200
Polk	29,134	1,219	30,353	71,700	3,200	74,900
Putnam	26,554	4,768	31,322	85,500	11,900	97,400
St. Johns	18,775	2,989	21,764	60,600	7,400	68,000
St. Lucie	588	(1/)	588	1,100	(2/)	1,100
Santa Rosa	9,278	720	9,998	34,700	2,300	37,000
Sarasota	3,395	(1/)	3,395	6,700	(2/)	6,700
Seminole	4,002	285	4,287	14,400	800	15,200
Sumter	5,729	1,037	6,766	19,500	2,900	22,400
Suwannee	24,340	395	24,735	75,800	1,400	77,200
Taylor	22,838	1,032	23,870	52,800	2,900	55,700
Union	10,397	390	10,787	38,400	1,200	39,600
Volusia	21,910	512	22,422	64,500	1,500	66,000
Wakulla	5,840	2,048	7,888	15,900	5,400	21,300
Walton	12,258	2,555	14,813	40,600	6,800	47,400
Washington	11,466	2,051	13,517	37,900	5,600	43,500
Total	823,915	113,511	937,426	2,412,100	299,700	2,711,800

1/ Less than 500 board feet.

2/ Less than 50 cords.

STANDARD FOREST SURVEY TABLES

As each state throughout the Nation is reported upon by the Forest Survey following initial or resurveys, a standard set of tables presenting information on forest area, ownership, timber volume, growth and drain will be prepared. With such tables, forest statistics for any region or group of states can easily be compiled. Standard tables prepared for the State of Florida, based on the 1949 survey, appear on the following pages.

Table 36.--Land area by major classes of forest land. Florida, 1949

Class of land	Land area
	Thousand acres
Forest land	
Commercial	21,451
Noncommercial	1,268
Reserved	
Commercial	46
Noncommercial	282
Total forest land	23,047
Nonforest land[1]	11,681
Total land	34,728

[1] Includes 249 thousand acres of water according to Survey standards of area classification but defined by the Bureau of Census as land.

Table 37.--Commercial forest land area by ownership class by stand-size class. Florida, 1949

Ownership class	Total	Saw-timber stands	Pole-timber stands	Seedling & sapling stands	Nonstocked & other areas n.e.c.
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres
Federally owned or managed					
National forest	1,025	212	327	213	273
Indian	36	(1/)	(1/)	1	35
Other	920	141	110	56	613
Total Federal	1,981	353	437	270	921
State	223	35	16	7	165
County & municipal	56	6	4	2	44
Private	19,191	2,839	3,073	2,017	11,262
Total all ownerships	21,451	3,233	3,530	2,296	12,392

1/ Less than 500 acres.

Table 38.--Volume of live saw timber and primary growing stock on commercial forest land by stand-size class. Florida, 1949

Stand-size class	Volume	
	Live saw timber	Primary growing stock
	Million bd. ft.	Million cu. ft.
Saw-timber stands	13,517	3,933
Pole-timber stands	2,975	1,914
Seedling and sapling stands	1,055	442
Nonstocked and other areas not elsewhere classified	3,047	1,068
Total all stands	20,594	7,357

Table 39.--Volume of live saw timber and primary growing stock on commercial forest land by ownership class. Florida, 1949

Ownership class	Volume	
	Live saw timber	Primary growing stock
	Million bd. ft.	Million cu. ft.
Federally owned or managed		
National forest	1,331	520
Indian	12	6
Other	948	346
Total Federal	2,291	872
State	201	71
County and municipal	39	15
Private		
Farm	(1/)	(1/)
Industrial and other	(1/)	(1/)
Total private	18,063	6,399
Total all ownerships	20,594	7,357

1/ Data not available.

Table 40.--Volume of live saw timber and primary growing stock on commercial forest land by species. Florida, 1949

Species	Volume	
	Live saw timber	Primary growing stock
	Million bd. ft.	Million cu. ft.
Softwoods:		
Longleaf and slash pines	10,768	3,631
Shortleaf and loblolly pines	1,302	324
Other southern yellow pines	621	196
Spruce and balsam fir	--	--
White and red pines	--	--
Jack pine	--	--
Hemlock	--	--
Cypress	3,095	1,199
Other eastern softwoods	91	24
Total softwoods	15,877	5,374
Hardwoods:		
White oaks	319	98
Red oaks	768	295
Yellow birch	-	--
Sugar maple	--	--
Soft maples	190	121
Beech	--	--
Sweetgum	629	237
Tupelo and black gum	1,578	654
Ash	208	117
Hickory	157	57
Cottonwood and aspen	--	--
Basswood	25	10
Yellow-poplar	40	19
Black walnut	--	--
Other eastern hardwoods	803	375
Total hardwoods	4,717	1,983
Total all species	20,594	7,357

Table 41.--All-timber volume on commercial forest land by kind of material. Florida, 1949

Kind of material	Volume
	Million cubic feet
Live all timber	
Primary growing stock	7,357
Secondary growing stock	[1] 3,965
Total	11,322
Salvable dead all timber	--
Total all timber	11,322

[1] Includes 1,009 million cu. ft. of palm.

Table 42.--Net growth and normal mortality of live saw timber and primary growing stock on commercial forest land by species group. Florida, 1948

Species group	Live saw-timber volume		Primary growing stock	
	Current annual net growth	Current annual normal mortality	Current annual net growth	Current annual normal mortality
	Million bd. ft.	Million bd. ft.	Million cu. ft.	Million cu. ft.
Softwoods	935	78	291	27
Hardwoods	190	27	79	9
Total	1,125	105	370	36

Table 43.--Commodity drain of live saw-timber volume and primary growing stock on commercial forest land by species group. Florida, 1948

Species group	Live saw timber volume			Primary growing stock		
	Cutting drain	Logging waste	Commodity drain1/	Cutting drain	Logging waste	Commodity drain1/
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million cu. ft.	Million cu. ft.	Million cu. ft.
Softwoods	859	-35	824	198	8	206
Hardwoods	111	2	113	18	8	26
Total	970	33	937	216	16	232

1/ Total of cutting drain and logging waste.

Table 44.--Commodity production by timber products in cubic volume and in standard units. Florida, 1948

Timber products class	Quantity		
	Cubic volume	Standard units	
		Unit	Number
	M cu. ft.		
Sawlogs (for lumber, timber and saw ties)	88,820	M board feet[1]	546,900
Veneer bolts	13,590	M board feet[1]	86,200
Cooperage bolts	1,640	M board feet[1]	10,500
Pulpwood bolts	96,960	Standard cords[2]	1,221,200
Fuel wood	28,400	Standard cords[2]	351,700
Chemical wood	39,560	Standard cords[2]	608,700
Piling	740	Linear feet	1,048,500
Poles	5,330	Pieces	373,200
Posts (round and split)	1,120	Pieces	1,710,400
Hewn ties	8,340	Pieces	1,402,100
Round mine timbers	--	Pieces	--
Miscellaneous	1,520	Cubic feet	1,520
Total all products	286,020	--	--

1/ Board feet, International 1/4-inch rule.

2/ Standard cords--rough wood (unpeeled). A pile of stacked wood 4 feet by 8 feet within its outside surface.

Table 45.--Area of commercial forest land by generalized forest type. Florida, 1949

Forest type[1]	Area
	Thousand acres
Longleaf-slash pine	12,993
Loblolly-shortleaf pine	1,144
Spruce-fir	--
White-red-jack pine (No. pine)	--
Maple-beech-birch (No. hardwood)	--
Oak-hickory	2,481
Hardwood-pine	654
Mixed hardwoods	--
Aspen-birch	--
Swamp and bottomland forests	4,179
Total	21,451

[1] Forest type acreages in this table were computed on a cubic-volume basis except for seedling and sapling stands, where number of stems were the criteria. Specifications required 50 percent of the cubic volume or number of stems of the indicated species except for the hardwood-pine type which required 25 percent pine.

Table 46.--Live all-timber volume on commercial forest land by kind of growing stock, species group, tree size class, and class of material. Florida, 1949

Kind of growing stock, tree-size class, and class of material	Total	Softwoods	Hardwoods
	Million cu. ft.	Million cu. ft.	Million cu. ft.
Primary growing stock			
Live saw-timber trees			
Sawlog portion	3,502	2,687	815
Top portion	771	592	179
Total live saw timber trees	4,273	3,279	994
Live pole-timber trees	3,084	2,095	989
Total primary growing stock	7,357	5,374	1,983
Secondary growing stock			
Sound cull trees			
Saw-timber size	1,086	96	990
Pole-timber size	1,431	86	1,345
Total sound cull trees	2,517	182	1/ 2,335
Rotten cull trees	1,167	168	999
Limbs	281	--	281
Total secondary growing stock	3,965	350	3,615
Grand total	11,322	5,724	5,598

1/ Includes 1,009 million cu. ft. of palm.

Table 47.--Volume of live saw timber on commercial forest land by diameter class group by species. Florida, 1949

Species	Diameter class groups 9.0-12.9" d.b.h.[1]	 13.0-18.9" d.b.h.	 19.0" and larger d.b.h.
	Million bd. ft.	Million bd. ft.	Million bd. ft.
Longleaf & slash pines	7,592	2,905	271
Shortleaf & loblolly pines	449	696	157
White & chestnut oaks	44	105	170
Tupelo & blackgum	424	834	320
Sweetgum	143	370	116
Yellow-poplar	12	28	--

[1] 10" diameter class not included for eastern hardwoods.

Table 48.--Net growth, normal mortality, and commodity drain on primary growing stock on commercial forest land by tree-size class. Florida, 1948

Tree size class	Current annual net growth	Current annual normal mortality	Current annual commodity drain
	Million cu. ft.	Million cu. ft.	Million cu. ft.
Saw-timber trees	355	22	209
Pole-timber trees	15	14	23
Total all trees	370	36	232

DEFINITION OF TERMS

Land-Use Classes

Forest land. Includes (a) lands which are at least 5 percent stocked with trees of any size and capable of producing saw timber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 5-percent stocking but which have not been developed for other use; subdivided into the following classes:

Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually saw timber), (b) economically available now or in the future, and (c) not withdrawn from timber use.

Noncommercial: Forest land which is (a) incapable of yielding wood products (usually saw timber) because of adverse site conditions, or (b) so inaccessible as to be permanently unavailable economically, and (c) not withdrawn for specific purposes.

Reserved: Public forest land that has been withdrawn from timber utilization through statute, ordinance, or administrative order.

Reserved commercial: Reserved forest land that otherwise qualifies as commercial forest land.

Reserved noncommercial: Reserved forest land that otherwise qualifies as noncommercial forest land.

Non-forest land. Includes land in any of the following classes:

Active agriculture: Land under cultivation or in pasture including farm yards and work lots.

Idle agriculture: Land previously cultivated or pastured but now idle or abandoned and having less than a five-percent stocking of trees.

Marsh: Low, wet areas characterized by a heavy growth of grass and reeds and an absence of timber.

Sand dunes and beaches: Non forested sand dunes and coastal beaches.

Urban and other areas: Includes towns, residential and industrial suburban areas, school yards, cemeteries, roads, railroads, power lines, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Pine types. Stands in which softwood species comprise at least 25 percent of the dominant and codominant trees with the named pine species predominating. Scattered stands of shortleaf pine and spruce pine are included with the loblolly pine type.

Cypress. Stands in which softwood species comprise at least 25 percent of the dominant and codominant trees with cypress or white cedar predominating.

Lowland hardwoods. Stands in which mixed hardwoods such as tupelo gum, black-gum, sweetgum, white oak, water oak, red maple, and ash comprise at least 75 percent of the dominant and codominant trees. Found along rivers, small streams, and in swamps and bays.

Upland hardwoods. Stands in which mixed hardwoods such as red oak, white oak, post oak, hickory, ash, sweetgum, elm, and yellow-poplar comprise at least 75 percent of the dominant and codominant trees. Found on the drier upland sites and on low rolling hills bordering the flatwood zone.

Scrub oak. Stands in which scrub species such as blackjack, bluejack, turkey and laurel oaks predominate and in which sound commercial species comprise less than five percent of satisfactory stocking.

Palms. Stands in which there is at least a five-percent stocking of merchantable palm trees and less than five-percent stocking of other sound commercial species.

Stand-Size Classes

Saw timber. Stands containing at least 1,500 board feet net, International 1/4-inch log rule, per acre in sound, live, softwood trees 9.0 inches d.b.h. or larger or hardwood trees 11.0 inches d.b.h. or larger. Two classes of saw-timber stands are recognized:

Large saw timber: Stands of saw timber having more than 50 percent of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Small saw timber: Stands of saw timber having 50 percent or less of the net board-foot volume in softwood trees 15.0 inches d.b.h. or larger, or hardwood trees 17.0 inches d.b.h. or larger.

Pole timber. Stands at least 10 percent stocked with pole-size or larger timber, with at least one half the minimum stocking in pole sizes, and which have less than 1,500 board feet net per acre of saw timber.

Seedling and sapling. Stands less than 10 percent stocked by pole-size or larger trees and with less than 1,500 board feet net per acre, but at least 40 percent stocked with commercial species. Eight hundred seedlings or saplings per acre are considered full stocking.

Poorly stocked and unstocked. Stands of pole-size or larger trees that are less than 10 percent stocked, seedling or sapling stands less than 40 percent stocked, or nonstocked forest land.

Diameters

D.b.h. (diameter at breast height). Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class. All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are in the 8-inch class.

Growing Stock Classification

Primary Growing Stock

Sound saw-timber trees: Live softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound saw timber.

Sound pole-timber trees: Straight boled trees between 5.0 inches d.b.h. and saw-timber size.

Sound sapling-size trees: Trees 1.0 inch to 4.9 inches d.b.h. which will grow into pole or saw timber size trees of sound quality.

Secondary Growing Stock

Sound cull trees: Live trees of all sizes that fail to qualify as sound timber because of poor form, excessive limbiness, or other sound defect. Volumes shown for sound cull trees also include the limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of sound saw timber size hardwoods. Scrub oak and noncommercial species such as ironwood, blue beech, sassafras, etc., are included in this group.

Rotten cull trees: Live trees of all sizes that fail to qualify as sound timber because of rotten defect.

Palms: All species of Sabal 5.0 inches d.b.h. and larger with at least 12 feet of clear stem. All palm trees were considered to be free of rotten defect.

Species Groups

Softwoods. All of the pines, eastern redcedar, Atlantic white-cedar, pond cypress, and baldcypress.

Soft-textured hardwoods. Black and water tupelos, sweetgum, soft maple, magnolia, and sweetbay. The other soft-textured hardwoods include cottonwood, willow, basswood, and yellow-poplar.

Hard-textured hardwoods. All of the oaks, hickories, ash, river birch, elm, hackberry, and sycamore.

Volume Estimates

Board-foot volume. The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound saw-timber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords. For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of sound saw-timber size hardwoods is included as sound cull material.

Volume in cubic feet. Same as volume shown in cords except bark is not included.

International 1/4-inch log rule. A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905\ (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord. A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average in Florida, 72 cubic feet of softwoods (wood only) or 71 cubic feet of hardwoods (wood only).

Gum Naval Stores Conditions

Round timber. A minimum of 15 longleaf and slash pine trees 9.0 inches d.b.h. or larger per acre that have never been worked for naval stores.

Working. Longleaf and slash pine trees that are now being worked for naval stores.

> Front-faced: Turpentine tree species on which the front or first face is now being worked.
>
> Back-faced: Turpentine tree species on which the front face has been worked out and on which a back (second or third, etc.) face is being worked.

Resting. Longleaf and slash pine trees with a worked-out front face at least 5 feet high and on which back-facing has not been started.

Abandoned. Longleaf and slash pine trees on which faces less than 5 feet high were discontinued.

Worked-out. Longleaf and slash pine trees on which two or more faces at least 5 feet high have been worked out and with no possibility of supporting another face.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or in combinations, were considered fully stocked.

DBH	Minimum number trees per acre
2 inches	800
4 inches	600
6 inches	450
8 inches	300
10 inches	200
12 inches	150
14 inches	110

Growth and Drain

Net growth. The volume of net growth was computed only on trees in the primary growing stock group. Cull trees and other trees in the secondary growing stock group were not included.

Board foot: The change during the calendar year in the saw-timber growing stock resulting from tree growth and mortality losses. Includes the gains accruing from the growth of small trees into saw-timber sizes during the year.

Cord or cubic foot: The change during the calendar year in the stem volume of all sound trees 5.0 inches and larger resulting from tree growth and mortality losses. Includes the gains accruing from the growth of saplings into pole sizes during the year.

Mortality

Board foot: The net volume lost from the saw-timber growing stock during the calendar year by the death of individual trees through the normal action of fire, tree competition, disease, insects, drought,and wind. Catastrophic losses did not occur during the growth period.

Cord or cubic foot: The net volume lost from the all-timber growing stock during the calendar year by the death of individual trees through natural causes.

Commodity drain

Board foot: The net volume removed from the saw-timber growing stock through cutting of timber products and logging waste during the calendar year.

Cord or cubic foot: The net volume removed from the all-timber growing stock through cutting of timber products and logging waste during the calendar year.

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest area. The sampling intensity of the 1949 survey was sufficient to provide an estimate of the total forest acreage in the State with a standard error of ± 0.4 percent. The probabilities are two out of three that the estimated forest acreage is within ± 0.4 percent of the actual acreage.

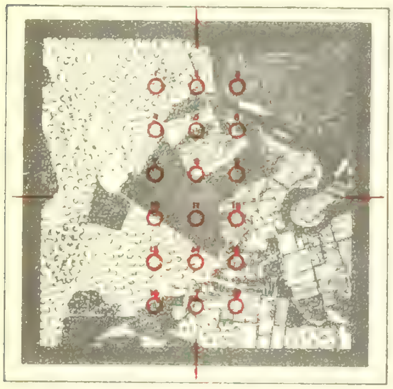
Timber volume. The standard error of estimate of the 1949 board-foot volume in the State was ± 1.7 percent. Here again, the probabilities are two out of three that the estimated volume is within ± 1.7 percent of the actual volume. Standard errors for the volumes in cords or cubic feet were not computed but they should be smaller.

Drain volumes. The 1948 commodity drain volumes were computed from the production records of all primary wood-using plants which drew on the State's timber supplies, and from an area sample of the production of fuel wood and fence posts. The reported production of the various commodities were converted into drain on the growing stock through drain-to-production adjustment ratios covering waste, over-utilization, mill overrun, and other factors. The sampling error for the total cubic-foot commodity drain estimate was ± 1.8 percent.

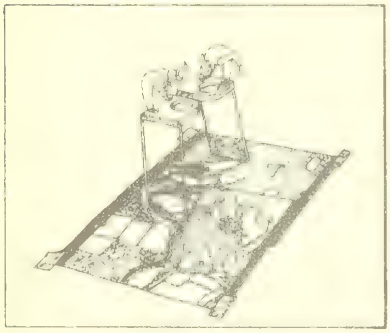
Use of county data. The tables showing area and timber volumes by county are included to permit grouping of county data in any desired combination. Statistics for individual counties have standard errors for forest area ranging from ± 1.4 percent to ± 12.0 percent, and for total board-foot volumes, from ± 7.0 to ± 18.6 percent. Obviously, detailed comparisons between county statistics are subject to considerable error and should be avoided. Grouping the data for a number of counties will increase the reliability of the estimates and make these data sufficiently accurate for most general purposes.

HOW THE FOREST INVENTORY IS MADE

The present system of inventory is based upon interpretation of aerial photographs supplemented by cruising of randomly selected ground plots. The county is the basic work unit. Steps in the procedure are as follows:

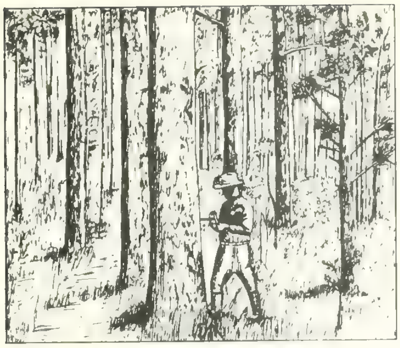


1. Acreages of forest land are estimated with the use of a dot grid placed on every third contact print along flight lines in each county. The proportion of dots falling on forest areas when applied to the gross area of the county yields a preliminary estimate of the acreage of forest land. This is later revised after certain field checks.



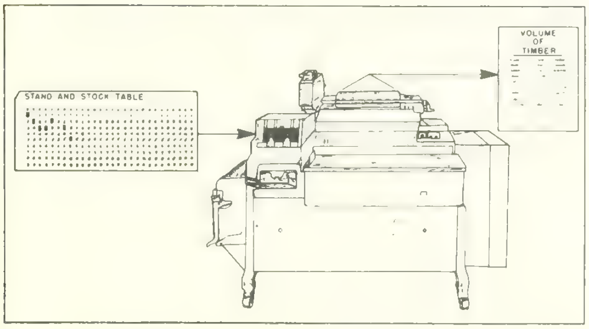
2. Every 3rd plot listed as forest in Step 1 is classified into forest type, stand class, and density class by careful stereoscopic analysis of the photographs. The proportion of plots falling in each classification when applied to the forest area of the county gives a preliminary estimate of the area in each classification. These areas are revised following ground checking.

3. Timber cruisers make a detailed on-the-ground tally of a proportion of the photo plots in each stand class to obtain volume, growth, cull, and mortality data, and to check accuracy of photo classification. Proportions vary according to distribution of stand classes. Every 3rd large saw-timber photo plot, every 4th small saw-timber, every 6th pole-timber, and every 13th seedling and sapling, and every 26th denuded plot were taken in Florida. Samples of idle and agricultural plots were also checked to determine the area reverting to forest.



4. Growth estimates are based on increment borings taken from trees of the various diameters and species in each forest type and stand class.

5. Estimates of the amount of wood produced as primary forest products are obtained from sawmills, pulpmills, veneer plants, and other wood-using industries. Other surveys are made to determine the amount of fuelwood and fence-post production. In addition, studies of wood utilization are made to adjust reported production of the various commodities to drain in terms of inventory volumes.



6. All field data are sent to Asheville for editing and are placed on punch cards for machine tabulation. Final estimates are based on statistical summaries.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia.

No. 22 - Southern Forests as a Source of Pulpwood.

No. 23 - 1946 Pulpwood Production by County in the Southeast.

No. 24 - Southern Pulpwood Production and the Timber Supply.

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina.

No. 26 - 1946 Commodity Drain by County from South Carolina Forests.

No. 27 - 1947 Pulpwood Production by County in the Southeast.

No. 28 - South Carolina's Forest Resources, 1947.

No. 29 - 1948 Pulpwood Production by County in the Southeast.

No. 30 - Forest Resources of Northeast Florida, 1949.

No. 31 - Forest Resources of Central Florida, 1949.

No. 32 - Forest Resources of Northwest Florida, 1949.

No. 33 - Forest Resources of South Florida, 1949.

No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948.

No. 35 - 1949 Pulpwood Production in the South.

USDA MISCELLANEOUS PUBLICATION

No.681 - Virginia Forest Resources and Industries, 1949.

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FEBRUARY 1952

FOREST STATISTICS FOR SOUTHWEST GEORGIA, 1951

by

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Division of Forest Economics

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA

E. L. Demmon, Director

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

The forest resources of the State of Georgia were first inventoried by the Forest Survey during the period 1934-36, and these findings have been published. Since that time, the effects of timber cutting, forest growth, changes in land use, better management practices, and other factors have caused changes in the growing stock which can only be measured accurately by on-the-ground surveys. A resurvey of the forest resources in Georgia was started in July 1950. This progress report presents area and timber volume statistics compiled from the resurvey for Southwest Georgia, designated as Survey Unit No. 2.

ACKNOWLEDGMENTS

The Southeastern Station gratefully acknowledges the cooperation and assistance provided by State Forester Guyton DeLoach and his staff, and by the Union Bag and Paper Corporation and the St. Regis Paper Company in providing additional personnel to intensify the collection of data in the field.

The Division of Forest Economics is under the direction of James W. Cruikshank. The field inventory work was under the supervision of Mackay B. Bryan, and photo interpretation work was done by R. C. Aldrich. Office compilation of the data was under the direction of Miss Agnes Creasman, assisted by Miss Priscilla Walker and Miss Camilla Young.

CONTENTS

Page

1951 HIGHLIGHTS AND SIGNIFICANT CHANGES - - - - - - - - - - - - - - - 1

TABLES FOR THE SURVEY UNIT, 1951

AREA
1. Gross area by broad use class - 7
2. Ownership of land - - - - - - - - - - - - - - - - - - - 8
3. Commercial forest area by forest type and stand-size class - - - - - 9

NET VOLUME OF SAW TIMBER
4. By species and stand-size class - - - - - - - - - - - - - - - - - - - 10
5. By species and diameter class - 11
6. By forest type and stand-size class - - - - - - - - - - - - - - - - - 12

NET VOLUME OF ALL TIMBER (in thousand cords)
7. By species and stand-size class - - - - - - - - - - - - - - - - - - - 13
8. By species and diameter class - 14
9. By species and class of material - - - - - - - - - - - - - - - - - - 15
10. By forest type and stand-size class - - - - - - - - - - - - - - - - - 16

NET VOLUME OF POLE-TIMBER TREES (in thousand cords)
11. By forest type and stand-size class - - - - - - - - - - - - - - - - - 17

NET VOLUME OF ALL TIMBER (in million cubic feet)
12. By species and diameter class - 18
13. By species and class of material - - - - - - - - - - - - - - - - - - 19

AVERAGE VOLUME PER ACRE
14. Of saw timber by forest type, species group, and stand-size class - 20
15. Of all trees by forest type, species group, and stand-size class - - 21

NAVAL STORES
16. Number of turpentine pine trees by working status and tree size - - 22
17. Area of turpentine pine types by working status - - - - - - - - - - 22
18. Area of stump land and tonnage of wood naval stores stumps - - - - - 23

GENERAL
19. Number of trees by species group, quality class, and tree size - - - 24
20. Area of seedling, sapling, and poorly stocked stands by plantability class - - - - - - - - - - - - 25
21. Commercial forest area by type and degree of stocking - - - - - - - - 26

TABLES FOR COUNTIES, 1951

22. County area by broad use class - - - - - - - - - - - - - - - - - - - 27
23. Ownership of commercial forest land - - - - - - - - - - - - - - - - - 28
24. Net volume of saw timber by species group - - - - - - - - - - - - - - 29
25. Net volume of saw timber by broad species group and diameter class group - - - - - - - - - - - - - - - - - 30
26. Net volume of all timber by pulping species group and tree diameter group - 31

DEFINITION OF TERMS - 32

RELIABILITY OF THE DATA - 37

HOW THE FOREST INVENTORY IS MADE - - - - - - - - - - - - - - - - - - - 38

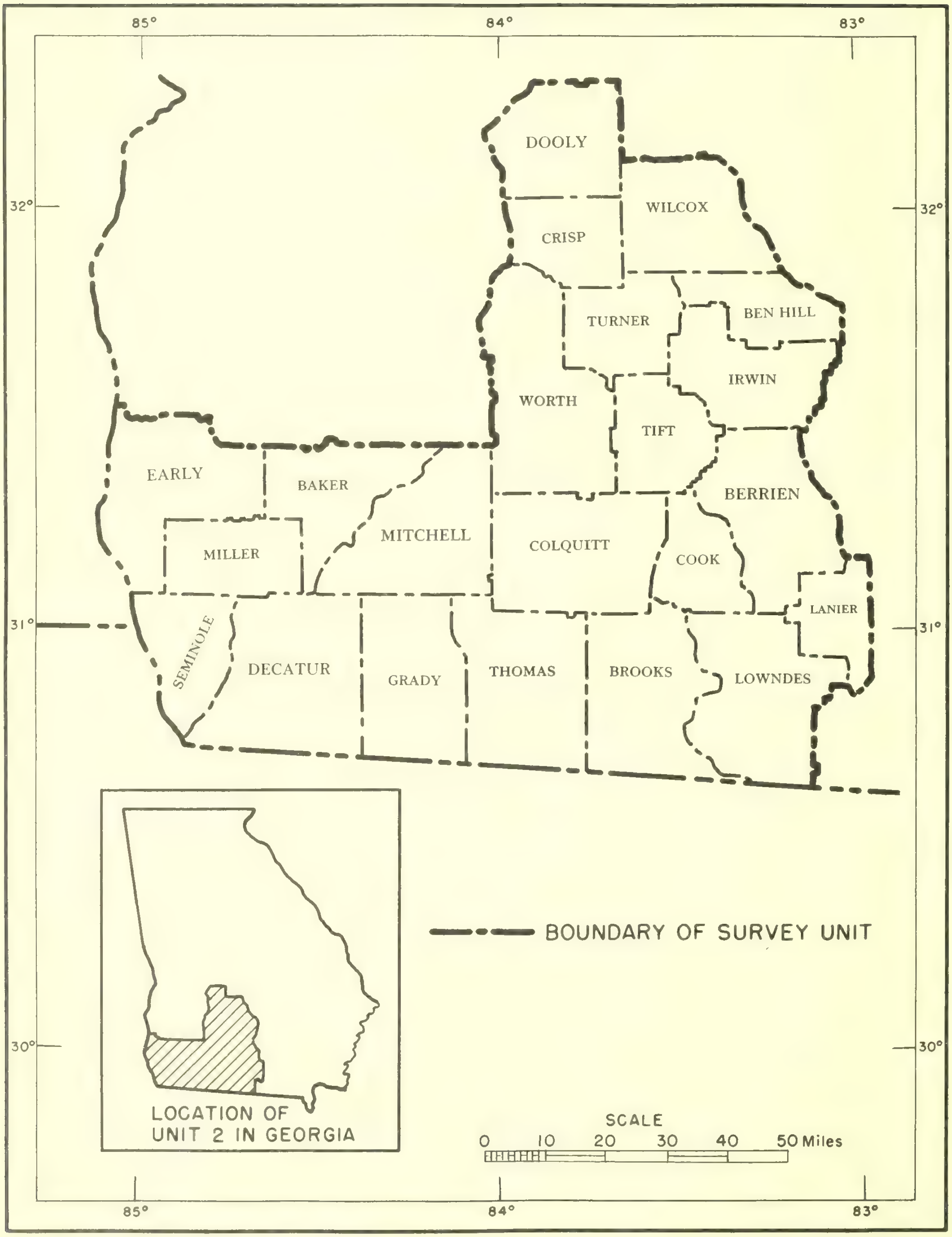

Figure 1.--Counties in Southwest Georgia included in Survey Unit No. 2

FOREST STATISTICS FOR SOUTHWEST GEORGIA, 1951

This progress report presents statistical data on forest area and timber volumes for 22 counties in Southwest Georgia designated as Survey Unit No. 2 (fig. 1). The data were obtained from a resurvey of the forest resources in the State which was started in July 1950. Field work for the Southwest Georgia Unit was completed in April 1951. The land area and timber volume estimates are based on combined use of aerial photographs and ground sample plots.

The original Forest Survey of Southwest Georgia was made in 1934. Comparisons of the statistics from both surveys have been made to determine the changes and trends which have taken place during the past 16-year period.

1951 HIGHLIGHTS AND SIGNIFICANT CHANGES

Small increase in forest land area: The Southwest Georgia Survey Unit encloses a total land area of 5.6 million acres, of which 54 percent, or nearly 3.1 million acres, is occupied by forests (fig. 2). During the period between surveys the acreage of forest land increased 37 thousand acres, or about 1.2 percent. Most of the remaining land area is in agricultural use, with 37 percent classified as active and 6 percent as idle. Other land uses such as urban and industrial areas, rights-of-way, etc. occupy only 3 percent of the total land area.

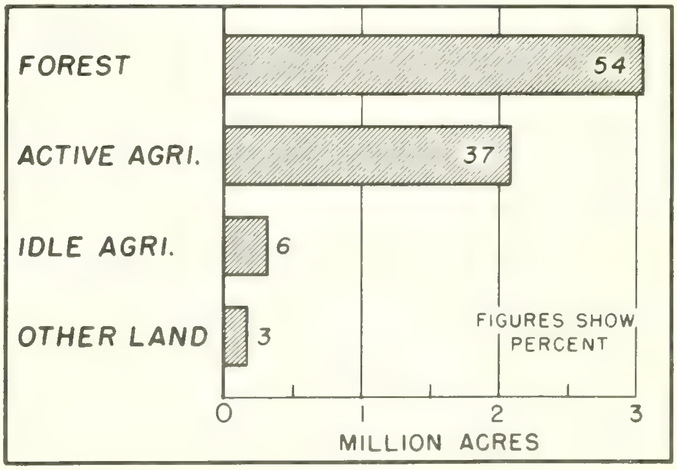

Figure 2.--Land use in Southwest Georgia, 1951

Nearly 98 percent of the forest land in the Unit is in private ownership, the remainder being held by Federal, State, or county and municipal agencies. Farmers own 85 percent of the private forest acreage. Practically all of the forest land can be considered commercial in character, since less than 100 acres are included in parks or other areas where timber cutting is not permitted.

Pine forest types decrease in area: The extent of the forest area in pine types has decreased materially since 1936. Acreage comparisons based on type definitions used in the original survey indicate that the area of longleaf, slash, and other pine types decreased more than 400 thousand acres, or 16 percent. This acreage has been taken over largely by hardwoods, with the greatest increase in the bottomland hardwood type (fig. 3).

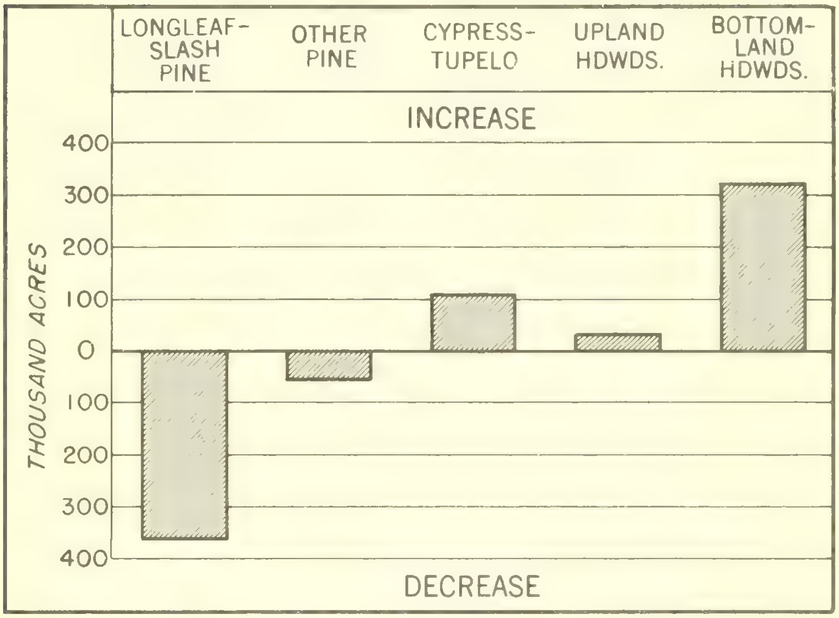

Figure 3.--Change in area of forest types, 1934 to 1951

These shifts in the composition of the forests are primarily the result of cutting practices used in harvesting timber. Where stands of pine are mixed with hardwoods or cypress, the preferred pine timber is often cut, leaving the less desirable species to occupy the site.

Under resurvey standards which divide the forest into types on the basis of cubic volume or number of stems, the pine types still predominate, occupying more than 1.8 million acres, or 60 percent of the forest land. Hardwood types, including hardwood-pine mixtures, occur on 1.1 million acres, or 37 percent, and the cypress type occupies the remaining 3 percent.

Large increase in young timber: The number of sound trees in the sapling, pole, and small saw-timber size classes increased sharply during the period between surveys. This increase occurred in all species groups and amounted to 75 percent, or more than 300 million trees. The hardwood species groups exhibit the greatest gain, particularly the hard-textured hardwoods including the oaks and hickories. The changes by species group and diameter class are shown in table A.

Table A.--Percent change in the number of sound trees by species group and diameter class

D.b.h. class (inches)	Pine	Cypress	Soft-textured hardwoods	Hard-textured hardwoods	All species
2	+22	+107	+194	+183	+105
4	+18	+ 61	+166	+230	+ 73
6	+17	+ 87	+ 51	+119	+ 36
8	+18	+ 56	+140	+130	+ 42
10	+28	+ 44	+171	+217	+ 59
12	+17	+ 94	+ 79	+ 61	+ 33
14	- 4	+ 59	+ 66	+ 72	+ 16
16	-10	- 10	+ 24	+ 72	+ 5
18	20	- 29	+ 40	+ 43	+ 1
20+	-30	- 11	- 27	+ 58	- 14
All diameters	+19	+ 83	+160	+177	+ 75
All trees 6" and larger	+16	+ 68	+ 83	+118	+ 37

Considering only the trees 5.0 inches d.b.h. or larger, the number of pine trees increased 16 percent. This increase is due entirely to a greater number of trees in the 6-inch to 12-inch diameter classes. In contrast, the number of pine trees in the larger, more valuable sizes decreased heavily, showing the effects of more intensive utilization. Similar trends are exhibited by the cypress and soft-textured hardwood groups, although the decrease in the larger sizes was not as heavy. Trees in the hard-textured hardwood group show increases in number throughout all diameter classes, indicating that the impact of timber cutting was not as heavy on the oaks, hickories, and other hard hardwoods.

Some of the increase in the number of smaller trees is undoubtedly due to a shift from old-growth to second-growth conditions. However, most of the change may be attributed to more intensive fire protection. Other measures, including better cutting practices, reforestation, and more conservative turpentining programs, have also had their effect.

The number of cull trees in the stand has also shown an appreciable increase since 1934 with most of the added volume being in rotten cull hardwoods. Trees with any marked degree of defect, either sound or rotten, are seldom removed in cutting operations. Thus, cull trees tend to accumulate in the stand unless silvicultural measures are taken to remove them.

Saw-timber volume increases 13 percent: Saw-timber trees in Southwest Georgia contain a total volume of 5.5 billion board feet. The predominating pine species make up 3.8 billion, or 69 percent, of this total. The volume of hardwood saw timber amounts to 1.4 billion board feet, or 26 percent, and cypress accounts for the remaining 5 percent. A comparison of the 1951 board-foot inventory volume with the volume found in 1934 shows an over-all increase of 13 percent. The pine volume increased only slightly, but the volumes of hardwood and cypress species were up 42 percent, as shown in table B.

Table B.--Change in volume of saw timber, 1934 to 1951

Species group	1934[1/]	1951	Change
	Million bd. ft.	Million bd. ft.	Percent
Pines	3,716	3,835	+ 3
Hardwoods	1,005	1,429	+42
Cypress	187	266	+42
All species	4,908	5,530	+13

[1/] Original survey volumes have been recomputed to allow for changes in standards between surveys and to provide a uniform basis for comparison. Thus, they will not agree with volumes previously published.

Slash pine is the most abundant species, with longleaf pine next in importance. Together, these two species make up nearly three-fourths of the pine saw-timber volume and more than half of the total volume including all species. Most of the pine board-foot volume is in small trees. The 10- to 12-inch diameter class contains 52 percent, the 14- to 18-inch contains 38 percent, and only 10 percent is found in trees 20 inches d.b.h. or larger. The size of the average pine saw-timber tree is 11.9 inches in diameter at breast height.

Hardwood sawlog quality poor: The board-foot volume of hardwood saw-timber trees is largely of poor quality. Using hardwood log-grade rules developed by the Forest Products Laboratory, based on specifications of the National Hardwood Lumber Association, only 16 percent of the net hardwood volume qualified as select or grade 1, and 24 percent as grade 2. The remaining 60 percent is almost equally divided between grade 3A logs, which contain a large proportion of low-grade factory lumber, and grade 3B logs, which are primarily suitable for cross ties and timbers.

In contrast, 20 percent of the softwood sawlog volume was grade 1, nearly half was grade 2, and only one-third was classified as grade 3. The softwood trees were graded using rules adapted from the Crossett Log Grades.

Sound growing stock volume increases 21 percent: The total growing stock volume is computed in terms of cubic feet and standard cords. It includes trees of pole-timber size (5.0 to 8.9 inches d.b.h. for softwoods and 5.0 to 10.9 inches d.b.h. for hardwoods) as well as the larger saw-timber trees. Trees below 5.0 inches in size are considered saplings or seedlings and are not assigned volumes for inventory purposes.

During the past 16-year period the volume of primary (sound tree) growing stock increased 288 million cubic feet, a gain of 21 percent. As shown in table C, there was a small but encouraging increase in pine volume, and the volumes of both hardwood and cypress timber were up sharply.

Table C.--Change in volume of all trees 5.0 inches d.b.h. and larger, 1934 to 1951

Species group	Primary growing stock			Secondary growing stock		
	1934[1]	1951	Change	1934[1]	1951	Change
	Million cu. ft.	Million cu. ft.	Percent	Million cu. ft.	Million cu. ft.	Percent
Pines	1,037	1,087	+ 5	11	34	+209
Hardwoods	298	508	+70	159	[2] 342	+115
Cypress	56	84	+50	6	9	+ 50
All species	1,391	1,679	+21	176	385	+119

[1] See footnote 1, table B.

[2] Limb volume of saw-timber-size hardwood trees excluded.

The increase in sound growing stock volume in terms of cubic feet or cords is, of course, due primarily to the large increase in the number of small trees. Pine timber makes up about two-thirds of the total cubic volume and hardwoods account for most of the remainder.

The cubic volume of secondary growing stock (cull trees) has more than doubled during the period. The increase in cull pine timber amounts to more than 200 percent, but the actual increase in volume is small. However, the increase in cull hardwood volume is significant in terms of volume. It means that two out of every five hardwood trees 5.0 inches d.b.h. and larger were culls from the standpoint of sawlog merchantability, either now or prospectively. The tremendous increase in hardwood volume, much of it cull or of low quality, is one of the most serious problems facing forest managers today.

Considerable acreage will require planting: About 280 thousand acres of forest land in the seedling and sapling and poorly-stocked stand-size classes are less than 40 percent stocked with sound trees and lack the necessary seed trees to restock the areas naturally. These idle acres will require planting if they are to be made reasonably productive in the near future. About half of the acreage is suitable for the operation of tractor-drawn planting machines, and the rest would require hand planting, since the areas needing planting are less than 10 acres in size, or because ground conditions would prohibit the use of planting machinery. This classification was limited to the pine, hardwood-pine, and upland hardwood forest types where the planting of pine seedlings could be commercially profitable.

Gum naval stores activity diminishes: The number of slash and longleaf pines being worked has decreased by nearly four and one-half million trees, or 32 percent, since 1934. The number of resting trees is down 54 percent, and four-fifths of the worked-out trees have disappeared. The acreage of slash and longleaf stands in working timber crops is also down sharply, having dropped from 850 thousand acres to about 340 thousand. On the other hand, the number of round trees 9.0 inches or larger in diameter which are suitable for gum-farming has more than doubled during the period.

Timber stocking pattern varied: Considering all sound trees of seedling, sapling, and larger sizes, about one-third of the forest land was found to be in a poorly-stocked or nonstocked condition, having less than 40 percent of the required number of trees per acre. The productivity of these lands will be low until they are restocked either naturally or through planting programs.

At the other extreme, 38 percent of the forest land was found to be in an overstocked condition, having more than the required number of trees for full stocking. In time, the stocking in many of these stands will be reduced through natural mortality or other agencies, but there are undoubtedly many areas which will require silvicultural treatment to prevent stagnation and provide for a reasonable rate of growth.

Table 1.--Gross area[1] by broad use class, 1951

Class of use	Area	
	Thousand acres	Percent
Forest land:		
Commercial	3,057.5	53.8
Noncommercial	0	--
Reserved		
Commercial	(2/)	--
Noncommercial	0	--
Total forest	3,057.5	53.8
Nonforest land:		
Agriculture - active	1,954.9	34.4
Agriculture - idle	312.2	5.5
Pasture	135.5	2.4
Marsh	22.2	0.3
Urban & other[3]	158.5	2.8
Total nonforest	2,583.3	45.4
Total land area	5,640.8	99.2
Total water area[4]	43.0	0.8
All classes	5,683.8	100.0

1/ From U. S. Bureau of the Census, 1940.

2/ Negligible.

3/ Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

4/ Census water area adjusted to exclude 14.8 thousand acres classified as land area by the Forest Survey, and to include 25.8 thousand acres defined by the Bureau of the Census as land area.

Table 2.--Ownership of land, 1951

Class of ownership	All land		Commercial forest land	
	Thousand acres	Percent	Thousand acres	Percent
Public land:				
National forest	3.7	0.1	3.3	0.1
Indian	--	--	--	--
Other federal	64.9	1.1	58.2	1.9
Total federal	68.6	1.2	61.5	2.0
State	8.9	0.2	6.8	0.2
County and municipal	12.2	0.2	4.1	0.2
Total public	89.7	1.6	72.4	2.4
Private land:				
Farm	(1/)	--	2,534.9	82.9
Other	(1/)	--	450.2	14.7
Total private	5,551.1	98.4	2,985.1	97.6
All classes	5,640.8	100.0	3,057.5	100.0

1/ Data not available.

Table 3.--Commercial forest area by forest type and stand-size class, 1951

(In thousand acres)

Forest type[1]	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	22.4	182.2	218.8	155.2	234.5	813.1
Slash pine	18.8	297.8	222.4	130.1	85.4	754.5
Loblolly pine	51.4	46.6	47.2	31.8	19.4	196.4
Shortleaf pine	1.2	7.0	-	12.1	1.1	21.4
Pond pine	1.2	6.6	32.8	7.6	3.8	52.0
Cypress	4.0	16.9	43.0	20.0	5.4	89.3
All sftwd. types	99.0	557.1	564.2	356.8	349.6	1,926.7
Hardwood-pine	43.6	32.9	102.3	74.8	35.7	289.3
Lowland hdwds.	81.7	70.5	217.8	195.9	39.4	605.3
Oak-hickory	7.6	1.2	35.2	82.6	35.3	161.9
Scrub oak	-	-	2.0	15.0	57.3	74.3
All hdwd. types	132.9	104.6	357.3	368.3	167.7	1,130.8
All types	231.9	661.7	921.5	725.1	517.3	3,057.5
Percent	7.6	21.7	30.1	23.7	16.9	100.0

[1] See description of forest types and stand-size classes in appendix.

Table 4.--Net volume[1] of saw timber by species and stand-size class, 1951

(In million board feet)

Species[2]	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	138.1	623.7	217.5	95.0	94.8	1,169.1
Slash pine	127.7	1,148.5	236.0	94.2	60.8	1,667.2
Loblolly pine	364.7	282.0	114.9	39.9	32.5	834.0
Pond pine	5.5	24.6	44.4	14.5	9.6	98.6
Shortleaf pine	25.5	23.7	5.8	10.9		65.9
Total	661.5	2,102.5	618.6	254.5	197.7	3,834.8
Cypress	37.1	104.7	95.8	19.3	9.0	265.9
Cedar	--	--	--	--	--	--
Total sftwds.	698.6	2,207.2	714.4	273.8	206.7	4,100.7
Hardwoods:						
Bl. & tupelo gum	158.8	211.6	95.5	26.4	13.9	506.2
Sweetgum	84.9	28.0	28.3	15.5	1.5	158.2
Yellow-poplar	60.7	40.0	4.6	4.6	--	109.9
Soft maple	20.0	12.9	12.9	3.9	--	49.7
Other soft hdwds.	28.9	26.7	33.7	9.3	--	98.6
Total	353.3	319.2	175.0	59.7	15.4	922.6
White & swamp chestnut oak	26.7	5.5	25.7		-	57.9
Other white oaks	29.2	0.4	13.2	7.1	2.2	52.1
So. red & swamp red oaks	11.4	2.6	16.1	8.2	27.2	65.5
Other red oaks	95.5	39.3	80.4	17.7	14.7	247.6
Hickory	15.9		12.5	1.8	--	30.2
Ash	9.0	1.8	4.1	1.3	-	16.2
Other hard hdwds.	16.8	3.0	16.0	1.8	-	37.6
Total	204.5	52.6	168.0	37.9	44.1	507.1
Total hdwds.	557.8	371.8	343.0	97.6	59.5	1,429.7
All species	1,256.4	2,579.0	1,057.4	371.4	266.2	5,530.4
Percent	22.7	46.7	19.1	6.7	4.8	100.0

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[1] Log scale, International 1/4-inch rule.

[2] See appendix for species combined with others.

Table 5.--Net volume[1] of saw timber by species and diameter class, 1951

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent
Softwoods:						
Longleaf pine	717.7	392.5	58.6	0.3	1,169.1	21.1
Slash pine	959.1	635.7	68.5	3.9	1,667.2	30.1
Loblolly pine	237.1	378.9	184.3	33.7	834.0	15.1
Pond pine	41.4	41.3	15.9	--	98.6	1.8
Shortleaf pine	41.1	19.8	5.0	--	65.9	1.2
Total	1,996.4	1,468.2	332.3	37.9	3,834.8	69.3
Cypress	162.9	70.3	17.1	15.6	265.9	4.8
Cedar	--	--	--	--	--	--
Total sftwds.	2,159.3	1,538.5	349.4	53.5	4,100.7	74.1
Hardwoods:						
Bl. & tupelo gum	157.4	299.3	35.9	13.6	506.2	9.1
Sweetgum	43.7	78.0	17.9	18.6	158.2	2.9
Yellow-poplar	9.9	67.1	29.1	3.8	109.9	2.0
Soft maple	8.6	32.4	8.7	-	49.7	0.9
Other soft hdwds.	27.7	54.3	8.7	7.9	98.6	1.8
Total	247.3	531.1	100.3	43.9	922.6	16.7
White & swamp chestnut oak	9.6	19.3	23.9	5.1	57.9	1.1
Other white oaks	7.5	24.7	17.3	2.6	52.1	0.9
So. red & swamp red oaks	8.5	25.1	22.4	9.5	65.5	1.2
Other red oaks	37.5	137.7	40.7	31.7	247.6	4.5
Hickory	4.0	16.9	7.1	2.2	30.2	0.5
Ash	3.8	12.4	--	--	16.2	0.3
Other hard hdwds.	9.6	15.1	12.9		37.6	0.7
Total	80.5	251.2	124.3	51.1	507.1	9.2
Total hdwds.	327.8	782.3	224.6	95.0	1,429.7	25.9
All species	2,487.1	2,320.8	574.0	148.5	5,530.4	100.0
Percent	45.0	41.9	10.4	2.7	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included.

Table 6.--Net volume[1] of saw timber by forest type and stand-size class, 1951

(In million board feet)

Forest type[2]	Large saw timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	142.0	603.9	205.5	61.4	89.1	1,101.9
Slash pine	97.9	1,200.3	222.5	57.7	71.3	1,649.7
Loblolly pine	285.4	261.8	67.5	16.6	25.6	656.9
Shortleaf pine	2.8	24.5	--	12.5		39.8
Pond pine	6.4	7.7	34.2	2.0	7.9	58.2
Cypress	23.5	79.2	82.1	17.3	9.0	211.1
All sftwd. types	558.0	2,177.4	611.8	167.5	202.9	3,717.6
Hardwood-pine	251.7	137.4	102.2	44.4	10.5	546.2
Lowland hdwds.	428.8	260.7	303.1	120.2	27.4	1,140.2
Oak-hickory	17.9	3.5	40.3	31.2	23.3	116.2
Scrub oak		--	--	8.1	2.1	10.2
All hdwd. types	698.4	401.6	445.6	203.9	63.3	1,812.8
All types	1,256.4	2,579.0	1,057.4	371.4	266.2	5,530.4
Percent	22.7	46.7	19.1	6.7	4.8	100.0

1/ Log scale, International 1/4-inch rule.

2/ See description of forest types and stand-size classes in appendix.

Table 7.--Net volume[1] of all timber by species and stand-size class, 1951

(In thousand cords)

PRIMARY GROWING STOCK

Species	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	347	2,246	1,208	379	285	4,465
Slash pine	380	4,421	1,718	347	202	7,068
Loblolly pine	920	953	464	127	92	2,556
Pond pine	16	114	155	52	31	368
Shortleaf pine	72	109	55	30	--	266
Total	1,735	7,843	3,600	935	610	14,723
Cypress	95	447	424	58	22	1,046
Cedar	--	--	1	--	--	1
Total sftwds.	1,830	8,290	4,025	993	632	15,770
Hardwoods:						
Bl. & tupelo gum	625	1,001	791	156	35	2,608
Sweetgum	269	173	361	62	4	869
Yellow-poplar	157	165	71	13	--	406
Soft maple	116	77	78	13	--	284
Other soft hdwds.	123	87	282	34	--	526
Total	1,290	1,503	1,583	278	39	4,693
White & swamp chestnut oak	85	17	103	5	--	210
Other white oaks	75	11	33	59	25	203
So. red & swamp red oaks	39	8	158	38	66	309
Other red oaks	289	147	449	125	37	1,047
Hickory	63	--	136	18	4	221
Ash	24	5	42	4	--	75
Dogwood, persimmon	--	11	35	3	--	49
Other hard hdwds.	42	14	61	2	--	119
Total	617	213	1,017	254	132	2,233
Total hdwds.	1,907	1,716	2,600	532	171	6,926
All species	3,737	10,006	6,625	1,525	803	22,696
Percent	16.5	44.1	29.2	6.7	3.5	100.0

SECONDARY GROWING STOCK

Sound culls						
Softwoods	6	100	206	74	85	471
Hardwoods[2]	851	756	1,245	647	700	4,199
Rotten culls	381	371	713	227	61	1,753
All other classes	1,238	1,227	2,164	948	846	6,423

[1] Sound wood and bark.

[2] Includes scrub oak and noncommercial species.

Table 8.--Net volume[1] of all timber by species and diameter class, 1951

(In thousand cords)

PRIMARY GROWING STOCK

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	358	857	1,097	993	1,025	135	4,465
Slash pine	655	1,507	1,531	1,447	1,747	181	7,068
Loblolly pine	133	296	296	393	949	489	2,556
Pond pine	29	64	75	53	111	36	368
Shortleaf pine	13	77	45	71	49	11	266
Total	1,188	2,801	3,044	2,957	3,881	852	14,723
Cypress	145	199	220	241	173	68	1,046
Cedar	1	--	--	--	--	--	1
Total sftwds.	1,334	3,000	3,264	3,198	4,054	920	15,770
Hardwoods:							
Bl. & tupelo gum	210	457	564	477	779	121	2,608
Sweetgum	107	78	280	127	192	85	869
Yellow-poplar	19	87	28	30	164	78	406
Soft maple	44	62	45	29	83	21	284
Other soft hdwds.	40	86	143	83	135	39	526
Total	420	770	1,060	746	1,353	344	4,693
White & swamp chestnut oak	27	18	19	29	49	68	210
Other white oaks	2	16	57	21	60	47	203
So. red & swamp red oaks	35	23	82	26	66	77	309
Other red oaks	93	157	173	115	340	169	1,047
Hickory	25	92	28	12	42	22	221
Ash	3	5	24	12	31	--	75
Dogwood, persimmon	10	--	33	2	4	--	49
Other hard hdwds.	1	4	26	26	32	30	119
Total	196	315	442	243	624	413	2,233
Total hdwds.	616	1,085	1,502	989	1,977	757	6,926
All species	1,950	4,085	4,766	4,187	6,031	1,677	22,696
Percent	8.6	18.0	21.0	18.4	26.6	7.4	100.0

SECONDARY GROWING STOCK

Species	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	All diameters
Sound culls							
Softwoods	26	27	158	101	159	--	471
Hardwoods[2]	294	488	625	785	1,281	726	4,199
Rotten culls	98	243	240	131	492	549	1,753
Total secondary	418	758	1,023	1,017	1,932	1,275	6,423

[1] Sound wood and bark.

[2] Includes scrub oak and noncommercial species.

Table 9.--Net volume[1] of all timber by species and class of material, 1951

(In thousand cords)

Species	PRIMARY GROWING STOCK				SECONDARY GROWING STOCK	
	Saw-timber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	2,646	604	1,215	4,465	151	23
Slash pine	3,982	924	2,162	7,068	105	12
Loblolly pine	1,711	416	429	2,556	126	9
Pond pine	219	56	93	368	30	2
Shortleaf pine	145	31	90	266	14	--
Total	8,703	2,031	3,989	14,723	426	46
Cypress	565	137	344	1,046	45	57
Cedar	-	--	1	1	--	-
Total sftwds.	9,268	2,168	4,334	15,770	471	103
Hardwoods:						
Bl. & tupelo gum	1,102	275	1,231	2,608	1,199	594
Sweetgum	326	78	465	869	154	73
Yellow-poplar	218	54	134	406	51	56
Soft maple	108	25	151	284	388	152
Other soft hdwds.	202	55	269	526	299	172
Total	1,956	487	2,250	4,693	2,091	1,047
White & swamp chestnut oak	114	32	64	210	64	24
Other white oaks	103	25	75	203	854	31
So. red & swamp red oaks	134	35	140	309	135	21
Other red oaks	484	140	423	1,047	580	484
Hickory	60	16	145	221	42	8
Ash	34	9	32	75	28	10
Dogwood, Persimmon	6	-	43	49	4	4
Scrub oak[3]	--			--	307	
Other hard hdwds.	70	18	31	119	94	21
Total	1,005	275	953	2,233	2,108	603
Total hdwds.	2,961	762	3,203	6,926	4,199	1,650
All species	12,229	2,930	7,537	22,696	4,670	1,753
Percent	53.9	12.9	33.2	100.0	72.7	27.3

[1] Sound wood and bark.

[2] Includes limb volume of sound hardwood saw-timber trees.

[3] Includes noncommercial species.

Table 10. Net volume[1] of all timber by forest type and stand-size class, 1951

(In thousand cords)

PRIMARY GROWING STOCK

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	348	2,139	1,188	219	264	4,158
Slash pine	319	4,759	1,695	237	230	7,240
Loblolly pine	782	928	338	66	74	2,188
Shortleaf pine	10	141	--	45	-	196
Pond pine	16	42	150	12	22	242
Cypress	51	347	501	47	22	968
All sftwd. types	1,526	8,356	3,872	626	612	14,992
Hardwood-pine	778	557	626	260	36	2,257
Lowland hdwds.	1,373	1,080	1,841	497	69	4,860
Oak-hickory	60	13	286	120	78	557
Scrub oak	-			22	8	30
All hdwd. types	2,211	1,650	2,753	899	191	7,704
All types	3,737	10,006	6,625	1,525	803	22,696
Percent	16.5	44.1	29.2	6.7	3.5	100.0

SECONDARY GROWING STOCK

Forest type	Large saw-timber stands	Small saw-timber stands	Pole timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	44	86	70	19	145	364
Slash pine	52	272	164	45	40	573
Loblolly pine	120	97	102	76	10	405
Shortleaf pine	4	2	-	4	2	12
Pond pine	5	-	14	5	-	24
Cypress	25	53	100	9	4	191
All sftwd. types	250	510	450	158	201	1,569
Hardwood-pine	245	105	190	71	26	637
Lowland hdwds.	720	611	1,421	548	368	3,668
Oak-hickory	23	1	101	156	131	412
Scrub oak	-	--	2	15	120	137
All hdwd. types	988	717	1,714	790	645	4,854
All types	1,238	1,227	2,164	948	846	6,423
Percent	19.3	19.1	33.7	14.7	13.2	100.0

[1] Sound wood and bark.

Table 11.--Net volume[1] of pole-timber trees by forest type and stand-size class, 1951

(In thousand cords)

PRIMARY GROWING STOCK

Forest type	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	7	430	598	52	16	1,103
Slash pine	47	1,208	1,039	67	34	2,395
Loblolly pine	86	220	152	23	6	487
Shortleaf pine	4	72	--	11	--	87
Pond pine	-	20	55	5	-	80
Cypress	-	130	279	-	-	409
All sftwd. types	144	2,080	2,123	158	56	4,561
Hardwood-pine	161	188	345	135	8	837
Lowland hdwds.	292	374	1,036	177		1,879
Oak-hickory	14	4	180	40	20	258
Scrub oak	-	-	--	-	2	2
All hdwd. types	467	566	1,561	352	30	2,976
All types	611	2,646	3,684	510	86	7,537
Percent	8.1	35.1	48.9	6.8	1.1	100.0

SECONDARY GROWING STOCK

Forest type	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Longleaf pine	3	18	21	5	35	82
Slash pine	14	98	55	21	21	209
Loblolly pine	45	44	22	1	--	112
Shortleaf pine	3	--		--		3
Pond pine	-	--	-	-	-	
Cypress	6	42	77	5	1	131
All sftwd. types	71	202	175	32	57	537
Hardwood-pine	84	28	94	9	13	228
Lowland hdwds.	163	238	564	118	75	1,158
Oak-hickory	2		44	34	16	96
Scrub oak	--		-	8	83	91
All hdwd. types	249	266	702	169	187	1,573
All types	320	468	877	201	244	2,110
Percent	15.2	22.2	41.6	9.5	11.5	100.0

[1] Sound wood and bark.

Table 12.--Net volume[1] of all timber by species and diameter class, 1951

(In million cubic feet)

PRIMARY GROWING STOCK

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	20.9	57.7	81.5	76.7	81.4	11.5	329.7
Slash pine	37.4	100.6	111.1	111.7	139.4	15.2	515.4
Loblolly pine	7.8	19.7	21.4	30.0	75.6	41.4	195.9
Pond pine	1.6	4.3	5.1	3.9	8.6	3.1	26.6
Shortleaf pine	0.8	5.1	3.3	5.5	3.8	0.9	19.4
Total	68.5	187.4	222.4	227.8	308.8	72.1	1,087.0
Cypress	9.7	14.6	17.5	20.4	15.0	6.5	83.7
Cedar	0.1	--	--	--	--	--	0.1
Total sftwds.	78.3	202.0	239.9	248.2	323.8	78.6	1,170.8
Hardwoods:							
Bl. & tupelo gum	13.1	29.8	39.3	35.7	62.4	9.7	190.0
Sweetgum	6.4	5.3	19.4	9.3	15.8	7.0	63.2
Yellow-poplar	1.1	5.8	1.9	2.1	13.5	6.3	30.7
Soft maple	2.8	4.1	3.1	2.0	6.6	1.7	20.3
Other soft hdwds.	2.6	5.6	9.9	6.0	11.0	3.2	38.3
Total	26.0	50.6	73.6	55.1	109.3	27.9	342.5
White & swamp chestnut oak	1.6	1.2	1.3	2.1	3.9	5.6	15.7
Other white oaks	0.1	1.1	4.0	1.6	5.0	3.8	15.6
So. red & swamp red oaks	2.2	1.6	5.7	1.9	5.1	6.3	22.8
Other red oak	5.9	10.1	12.1	8.1	27.7	13.9	77.8
Hickory	1.6	6.0	1.9	0.9	3.5	1.8	15.7
Ash	0.2	0.3	1.7	0.8	2.5	--	5.5
Dogwood, persimmon	0.6	--	2.3	0.1	0.4	--	3.4
Other hard hdwds.	0.1	0.3	1.8	1.9	2.6	2.5	9.2
Total	12.3	20.6	30.8	17.4	50.7	33.9	165.7
Total hdwds.	38.3	71.2	104.4	72.5	160.0	61.8	508.2
All species	116.6	273.2	344.3	320.7	483.8	140.4	1,679.0
Percent	6.9	16.3	20.5	19.1	28.8	8.4	100.0

SECONDARY GROWING STOCK

Sound culls							
Softwoods	1.5	1.9	10.1	7.8	12.7	--	34.0
Hardwoods[2]	19.7	32.6	43.6	50.1	101.3	58.4	305.7
Rotten culls	5.8	16.6	16.8	12.5	38.1	45.7	135.5
Total secondary	27.0	51.1	70.5	70.4	152.1	104.1	475.2

[1] Excluding bark.

[2] Includes scrub oak and noncommercial species.

Table 13.--Net volume[1] of all timber by species and class of material, 1951

(In million cubic feet)

Species	PRIMARY GROWING STOCK				SECONDARY GROWING STOCK	
	Saw-timber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	203.0	48.1	78.6	329.7	10.4	1.7
Slash pine	306.8	70.6	138.0	515.4	7.5	1.0
Loblolly pine	135.4	33.0	27.5	195.9	9.5	0.6
Pond pine	17.0	3.7	5.9	26.6	2.2	0.1
Shortleaf pine	10.9	2.6	5.9	19.4	0.9	--
Total	673.1	158.0	255.9	1,087.0	30.5	3.4
Cypress	48.6	10.8	24.3	83.7	3.5	5.1
Cedar	--	--	0.1	0.1	--	--
Total sftwds.	721.7	168.8	280.3	1,170.8	34.0	8.5
Hardwoods:						
Bl. & tupelo gum	87.2	20.6	82.2	190.0	84.5	43.0
Sweetgum	25.8	6.3	31.1	63.2	12.0	5.3
Yellow-poplar	17.6	4.3	8.8	30.7	4.2	4.5
Soft maple	8.3	2.0	10.0	20.3	26.3	10.6
Other soft hdwds.	16.2	4.0	18.1	38.3	22.1	13.7
Total	155.1	37.2	150.2	342.5	149.1	77.1
White & swamp chestnut oak	9.3	2.3	4.1	15.7	5.0	2.2
Other white oaks	8.3	2.1	5.2	15.6	65.0	2.7
So. red & swamp red oaks	10.7	2.6	9.5	22.8	10.2	1.8
Other red oaks	39.7	10.0	28.1	77.8	42.3	39.7
Hickory	4.9	1.3	9.5	15.7	3.0	0.7
Ash	2.7	0.6	2.2	5.5	2.1	0.9
Dogwood, persimmon	0.4	0.1	2.9	3.4	0.4	0.3
Scrub oak[3]		-	-		20.9	--
Other hard hdwds.	5.6	1.4	2.2	9.2	7.7	1.6
Total	81.6	20.4	63.7	165.7	156.6	49.9
Total hdwds.	236.7	57.6	213.9	508.2	305.7	127.0
All species	958.4	226.4	494.2	1,679.0	339.7	135.5
Percent	57.1	13.5	29.4	100.0	71.5	28.5

[1] Excluding bark.

[2] Includes limb volume of sound hardwood saw-timber trees.

[3] Includes noncommercial species.

Table 14.--Average volume[1] per acre of saw timber by forest type, species group, and stand-size class, 1951

(In board feet)

Forest type and species group	Large saw timber stands	Small saw-timber stands	Pole timber stands	Other stand sizes	All stands
Longleaf pine					
Softwood	6,178	3,303	906	368	1,330
Hardwood	157	12	33	18	25
Slash pine					
Softwood	4,269	3,879	951	588	2,086
Hardwood	928	152	49	12	101
Loblolly pine					
Softwood	4,818	5,313	1,368	631	3,016
Hardwood	733	296	62	194	328
Shortleaf pine					
Softwood	2,001	3,520	-	871	1,793
Hardwood	436		-	75	69
Pond pine					
Softwood	4,769	1,163	1,041	871	1,103
Hardwood	735			-	16
Cypress					
Softwood	5,213	4,428	1,800	1,040	2,237
Hardwood	630	248	107	-	127
Hardwood-pine					
Softwood	3,223	1,911	549	378	1,041
Hardwood	2,554	2,272	449	119	847
Lowland hardwoods					
Softwood	693	459	301	241	349
Hardwood	4,552	3,238	1,091	386	1,534
Oak-hickory					
Softwood	804	--	184	211	231
Hardwood	1,546	2,943	963	251	487
Scrub oak					
Softwood		--	--	97	95
Hardwood	-	-	-	43	42
All types					
Softwood	3,012	3,336	775	387	1,341
Hardwood	2,405	562	372	126	468

[1] Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand-size class, 1951

(In standard cords)

Forest type and species group	Large saw-timber stands		Small saw-timber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[2]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	15.1	--	11.7	0.3	5.1	0.2	1.2	0.2	5.0	0.2
Hardwood	0.4	2.0	0.1	0.2	0.3	0.1	(3/)	0.2	0.1	0.2
Slash pine										
Softwood	14.0	0.1	15.0	0.2	7.2	0.2	2.1	0.1	9.0	0.2
Hardwood	3.0	2.7	1.0	0.7	0.4	0.5	(3/)	0.3	0.6	0.6
Loblolly pine										
Softwood	12.6	0.1	17.9	0.1	6.0	1.8	2.2	0.5	9.6	0.6
Hardwood	2.6	2.3	2.0	2.0	1.2	0.4	0.5	1.1	1.6	1.5
Shortleaf pine										
Softwood	4.4	--	20.2	0.3	--	--	2.3	0.2	8.3	0.2
Hardwood	4.4	3.6	--	--	--	--	1.1	0.3	0.9	0.4
Pond pine										
Softwood	12.1	--	6.4	--	4.5	0.4	3.0	0.4	4.6	0.4
Hardwood	1.7	4.3	--	--	0.1	--	--	--	0.1	0.1
Cypress										
Softwood	11.2	--	18.5	0.3	7.9	0.6	2.7	0.4	8.6	0.5
Hardwood	1.5	6.2	2.0	2.8	3.7	1.7	--	0.2	2.2	1.7
Hardwood-pine										
Softwood	7.9	(3/)	7.4	0.2	2.6	0.1	1.4	0.1	3.5	0.1
Hardwood	10.0	5.6	9.5	3.0	3.5	1.8	1.3	0.8	4.3	2.1
Lowland hardwoods										
Softwood	1.9	0.1	1.8	0.1	1.0	0.1	0.8	0.1	1.1	0.1
Hardwood	14.9	8.7	13.5	8.6	7.4	6.4	1.6	3.8	6.9	6.0
Oak-hickory										
Softwood	2.0	--	--	--	0.9	--	0.8	(3/)	0.8	(3/)
Hardwood	5.9	3.0	10.8	0.8	7.2	2.9	0.9	2.4	2.6	2.5
Scrub oak										
Softwood	--	--	--	--	--	--	0.3	(3/)	0.3	(3/)
Hardwood	--	--	--	--	--	1.0	0.1	1.8	0.1	1.8
All types										
Softwood	7.9	(3/)	12.5	0.2	4.4	0.3	1.3	0.1	5.2	0.2
Hardwood	8.2	5.3	2.6	1.6	2.8	2.1	0.6	1.3	2.3	1.9

[1] Sound wood and bark.

[2] Sound trees; cull trees.

[3] Less than 0.05 cords per acre.

Table 16.--Number[1/] of turpentine pine trees by working status and tree size, 1951

(In thousands of trees)

Working status	Pole-size trees	Small saw-timber trees	Large saw-timber trees	All trees
Round timber	62,742	25,384	1,453	89,579
Working timber				
Front-faced	258	5,844	237	6,339
Back-faced	96	2,352	477	2,925
Resting timber	118	3,056	730	3,904
Worked-out timber	173	1,144	370	1,687
All classes	63,387	37,780	3,267	104,434

[1/] Includes sound cull trees.

Table 17.--Area of turpentine pine types by working status, 1951

Crop working status	Area	
	Thousand acres	Percent
Round timber	464.1	26.6
Working timber		
Front-faced	201.4	11.5
Back-faced	136.6	7.8
Resting timber	94.5	5.4
Worked-out timber	26.8	1.5
No status[1/]	824.0	47.2
All classes	1,747.4	100.0

[1/] Includes areas having insufficient stocking of turpentine trees 9.0 inches d.b.h. and larger.

Table 18.--Area of stump land and tonnage of wood naval stores stumps by availability class, 1951

Availability class	Area	Tonnage[1]
	Thousand acres	Thousand tons
Merchantable area	1,665.7	6,433
Marginal area[2]	43.1	135
Potential area[3]	348.1	1,564
Inaccessible area	159.9	615
All classes	2,216.8	8,747

[1] Includes stumps on agricultural land.

[2] Stump-land areas less than 25 acres in extent and partially worked areas.

[3] Areas unworkable at present due to density of timber stands.

Table 19.--Number of trees[1] by species group, quality class, and tree size, 1951

(In thousands of trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small saw-timber trees	Large saw-timber trees	All trees
Yellow pines:					
Sound trees	164,537	72,943	43,783	4,836	286,099
Sound culls	5,797	1,265	1,938	247	9,247
Rotten culls	1,029	235	254	56	1,574
Total	171,363	74,443	45,975	5,139	296,920
Other softwoods:					
Sound trees	29,382	9,673	3,741	250	43,046
Sound culls	569	200	319	—	1,088
Rotten culls	1,064	223	259	101	1,647
Total	31,015	10,096	4,319	351	45,781
Soft-textured hdwds.:					
Sound trees	213,168	38,455	7,985	2,538	262,146
Sound culls	50,670	17,018	3,358	715	71,761
Rotten culls	24,347	12,978	1,997	1,336	40,658
Total	288,185	68,451	13,340	4,589	374,565
Hard-textured hdwds.:					
Sound trees	104,722	16,954	2,531	1,779	125,986
Sound culls[2]	105,639	14,638	2,825	1,330	124,432
Rotten culls	6,433	1,920	945	861	10,159
Total	216,794	33,512	6,301	3,970	260,577
All species	707,357	186,502	69,935	14,049	977,843

[1] All trees 1.0 inch d.b.h. and larger.

[2] Includes scrub oak and noncommercial trees.

Table 20.--Area[1] of seedling, sapling, and poorly stocked stands by plantability class, 1951

Forest type	No planting required[2]	Suitable for machine planting	Hand planting required	All classes
	Thousand acres	Thousand acres	Thousand acres	Thousand acres
Longleaf pine	289.1	71.0	29.6	389.7
Slash pine	168.9	22.9	23.7	215.5
Loblolly pine	37.9	5.6	7.7	51.2
Shortleaf pine	10.9	2.3	--	13.2
Pond pine	11.4	--	--	11.4
Hardwood-pine	84.3	11.9	14.3	110.5
Oak-hickory	79.8	12.0	26.1	117.9
Scrub oak	16.6	16.7	39.0	72.3
All types	698.9	142.4	140.4	981.7
Percent	71.2	14.5	14.3	100.0

[1] Acreage of cypress and lowland hardwood types excluded.

[2] Sufficient seed trees present or area is restocking naturally.

Table 21.--Commercial forest area by type and degree of stocking, 1951

STOCKING IN ALL SOUND TREES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-99%	Over-stocked 100+%	Total area
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres
Longleaf pine	153.9	319.7	175.5	76.3	87.7	813.1
Slash pine	41.8	156.8	149.7	58.1	348.1	754.5
Loblolly pine	11.5	25.2	28.4	23.8	107.5	196.4
Shortleaf pine	--	6.6	3.2	3.5	8.1	21.4
Pond pine	1.1	18.8	8.3	7.8	16.0	52.0
Cypress	3.4	8.4	15.2	8.1	54.2	89.3
Hardwood-pine	33.7	53.3	36.6	42.8	122.9	289.3
Lowland hdwds.	24.2	79.3	82.8	58.5	360.5	605.3
Oak-hickory	23.3	42.1	29.9	15.5	51.1	161.9
Scrub oak	57.3	9.1	2.3	5.6	--	74.3
All types	350.2	719.3	531.9	300.0	1,156.1	3,057.5
Percent	11.5	23.5	17.4	9.8	37.8	100.0

STOCKING IN SOUND TREES 5.0 INCHES AND LARGER

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-99%	Over-stocked 100+%	Total area
Longleaf pine	301.4	335.7	109.8	51.0	15.2	813.1
Slash pine	160.3	294.6	139.4	79.0	81.2	754.5
Loblolly pine	46.1	68.9	43.6	18.0	19.8	196.4
Shortleaf pine	5.5	7.8	4.6	--	3.5	21.4
Pond pine	7.9	36.3	6.7	1.1	--	52.0
Cypress	19.8	21.8	24.1	9.0	14.6	89.3
Hardwood-pine	100.1	104.4	43.1	23.7	18.0	289.3
Lowland hdwds.	179.6	216.5	119.9	41.6	47.7	605.3
Oak-hickory	88.8	56.1	11.2	1.1	4.7	161.9
Scrub oak	71.1	3.2	--	--	--	74.3
All types	980.6	1,145.3	502.4	224.5	204.7	3,057.5
Percent	32.1	37.5	16.4	7.3	6.7	100.0

STOCKING IN SOUND SAW-TIMBER TREES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-99%	Over-stocked 100+%	Total area
Longleaf pine	417.4	305.3	66.3	22.2	1.9	813.1
Slash pine	288.3	285.9	133.2	32.5	14.6	754.5
Loblolly pine	64.5	77.2	38.0	14.4	2.3	196.4
Shortleaf pine	9.8	8.1	3.5	--	--	21.4
Pond pine	27.4	23.4	1.2	--	--	52.0
Cypress	37.8	25.5	19.3	2.3	4.4	89.3
Hardwood-pine	143.1	111.3	24.7	10.2	--	289.3
Lowland hdwds.	275.8	237.2	72.2	12.8	7.3	605.3
Oak-hickory	112.8	49.1	-	--	--	161.9
Scrub oak	73.1	1.2	--	--	--	74.3
All types	1,450.0	1,124.2	358.4	94.4	30.5	3,057.5
Percent	47.4	36.8	11.7	3.1	1.0	100.0

Table 22.--County area by broad use class, 1951

County	Total area[1]	Non-forest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Baker	227.9	110.5	7.2	--	110.2	49.9
Ben Hill	163.2	59.0	0.2	--	104.0	63.8
Berrien	300.8	88.8	1.0	--	211.0	70.4
Brooks	318.1	148.6	2.7	--	166.8	52.9
Colquitt	360.3	184.4	0.7	--	175.2	48.7
Cook	149.1	60.8	0.7	--	87.6	59.0
Crisp	190.7	110.7	1.7	--	78.3	41.4
Decatur	392.3	136.5	3.8	--	252.0	64.9
Dooly	252.8	154.2	1.6	--	97.0	38.6
Early	336.6	185.6	1.3	--	149.7	44.6
Grady	298.9	122.0	0.6	--	176.3	59.1
Irwin	238.1	104.8	0.3	--	133.0	55.9
Lanier	117.1	18.4	4.0	--	94.7	83.7
Lowndes	327.7	116.4	3.9	--	207.4	64.1
Miller	183.7	96.5	0.9	--	86.3	47.2
Mitchell	327.0	192.6	1.6	--	132.8	40.8
Seminole	177.3	77.8	3.5	--	96.0	55.2
Thomas	347.5	145.8	4.2	--	197.5	57.5
Tift	170.2	89.5	0.2	--	80.5	47.4
Turner	187.5	87.8	0.2	--	99.5	53.1
Wilcox	245.8	116.8	1.6	--	127.4	52.2
Worth	371.2	175.8	1.1	--	194.3	52.5
Unit total	5,683.8	2,583.3	43.0	--	3,057.5	54.2

[1] Gross area from Bureau of the Census, 1940.

Table 23.--Ownership of commercial forest land by county, 1951

County	Private		Public					
			National forest	Other federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Baker	110.2	100.0	-	--	-	--	-	--
Ben Hill	103.9	99.9	-	-	--	0.1	0.1	0.1
Berrien	208.2	98.7	-	-	2.7	0.1	2.8	1.3
Brooks	166.7	99.9	--	-	-	0.1	0.1	0.1
Colquitt	175.1	99.9	-	-	-	0.1	0.1	0.1
Cook	87.5	99.9	--		(1/)	0.1	0.1	0.1
Crisp	77.3	98.7	-		0.9	0.1	1.0	1.3
Decatur	222.8	88.4	-	26.0	1.5	1.7	29.2	11.6
Dooly	93.7	96.6	3.3	--	-	(1/)	3.3	3.4
Early	148.6	99.3	--	--	1.1	(1/)	1.1	0.7
Grady	176.2	99.9	--	--	-	0.1	0.1	0.1
Irwin	133.0	100.0		-	(1/)	--	(1/)	--
Lanier	86.1	90.9	-	8.6	-	--	8.6	9.1
Lowndes	205.8	99.2	-	0.9	-	0.7	1.6	0.8
Miller	86.3	100.0	-	-	-	(1/)	(1/)	--
Mitchell	132.7	99.9	-	-	-	0.1	0.1	0.1
Seminole	73.3	76.4		22.7	-	(1/)	22.7	23.6
Thomas	196.9	99.7		(1/)	--	0.6	0.6	0.3
Tift	79.8	99.1	-	-	0.6	0.1	0.7	0.9
Turner	99.4	99.9	-		-	0.1	0.1	0.1
Wilcox	127.4	100.0	--	--	--	(1/)	(1/)	--
Worth	194.2	99.9	-		--	0.1	0.1	0.1
Unit total	2,985.1	97.6	3.3	58.2	6.8	4.1	72.4	2.4

1/ Less than 50 acres.

Table 24.--Net volume[1] of saw timber by county and species group, 1951

(In million board feet)

County	Softwoods[2]	Gum, maple, and yellow-poplar[3]	Other hardwoods	All species
Baker	177.3	2.5	21.1	200.9
Ben Hill	244.8	28.5	1.8	275.1
Berrien	269.7	89.5	8.6	367.8
Brooks	191.2	31.8	51.7	274.7
Colquitt	200.3	21.8	9.9	232.0
Cook	100.4	39.3	11.2	150.9
Crisp	117.5	24.1	12.6	154.2
Decatur	226.1	77.5	61.3	364.9
Dooly	101.3	63.0	24.7	189.0
Early	92.8	56.1	53.0	201.9
Grady	237.3	82.9	48.3	368.5
Irwin	199.6	32.3	4.7	236.6
Lanier	173.3	24.6	8.6	206.5
Lowndes	304.0	78.5	12.5	395.0
Miller	68.3	6.4	26.5	101.2
Mitchell	192.1	6.5	20.7	219.3
Seminole	86.0	28.8	19.1	133.9
Thomas	391.1	54.5	60.4	506.0
Tift	136.2	25.6	9.1	170.9
Turner	152.6	41.9	1.8	196.3
Wilcox	162.7	56.0	29.6	248.3
Worth	276.1	50.5	9.9	336.5
Unit total	4,100.7	922.6	507.1	5,530.4

[1] Log scale, International 1/4-inch rule.

[2] Includes pine, cypress, and cedar.

[3] Includes other soft-textured hardwoods.

Table 25.--Net volume[1] of saw timber by county, broad species group, and diameter-class group, 1951

County	Softwoods		Hardwoods		Softwoods	Hardwoods
	9 14 inches	15+ inches	11-14 inches	15+ inches		
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent	Percent
Baker	93.8	83.5	11.3	12.3	88	12
Ben Hill	179.2	65.6	18.0	12.3	89	11
Berrien	231.4	38.3	76.7	21.4	73	27
Brooks	168.3	22.9	31.5	52.0	70	30
Colquitt	170.0	30.3	14.9	16.8	86	14
Cook	77.5	22.9	23.5	27.0	66	34
Crisp	76.9	40.6	20.8	15.9	76	24
Decatur	136.4	89.7	55.4	83.4	62	38
Dooly	73.8	27.5	36.7	51.0	54	46
Early	83.6	9.2	52.5	56.6	46	54
Grady	92.8	144.5	64.8	66.4	64	36
Irwin	157.5	42.1	14.3	22.7	84	16
Lanier	158.7	14.6	20.0	13.2	84	16
Lowndes	217.4	86.6	45.1	45.9	77	23
Miller	60.4	7.9	14.2	18.7	68	32
Mitchell	147.0	45.1	14.1	13.1	88	12
Seminole	60.9	25.1	26.7	21.2	64	36
Thomas	200.1	191.0	44.4	70.5	77	23
Tift	109.2	27.0	16.0	18.7	80	20
Turner	120.6	32.0	17.3	26.4	78	22
Wilcox	108.5	54.2	21.4	64.2	66	34
Worth	226.6	49.5	28.3	32.1	82	18
Unit total	2,950.6	1,150.1	667.9	761.8	74	26

1/ Log scale, International 1/4-inch rule.

Table 26.--Net volume[1] of all timber by county, pulping species group, and tree diameter group, 1951

(In thousand cords)

PRIMARY GROWING STOCK

County	Yellow pines		Other softwoods		Soft-textured hdwds.		Hard-textured hdwds.		All species
	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	
Baker	222	208	20	52	4	3	16	44	569
Ben Hill	620	300	--	--	28	57	14	2	1,021
Berrien	1,211	211	108	12	161	140	17	17	1,877
Brooks	697	114	113	5	361	60	155	116	1,621
Colquitt	608	177	2	--	82	43	21	24	957
Cook	231	112	16	6	85	83	21	24	578
Crisp	240	147	7	15	58	51	32	21	571
Decatur	566	285	10	6	256	143	269	121	1,656
Dooly	193	113	29	10	96	121	28	50	640
Early	269	33	68	20	272	102	103	111	978
Grady	233	434	--	--	382	118	165	95	1,427
Irwin	494	243	28	3	121	76	--	11	976
Lanier	601	120	74	9	183	39	4	18	1,048
Lowndes	615	300	128	30	109	153	50	28	1,413
Miller	304	52	17	3	18	7	47	51	499
Mitchell	346	250	--	--	96	9	44	28	773
Seminole	200	110	14	15	39	55	33	33	499
Thomas	556	657	1	4	294	96	120	136	1,864
Tift	370	143	43	16	94	44	14	19	743
Turner	423	156	70	17	103	84	8	1	862
Wilcox	314	210	30	16	93	118	19	64	864
Worth	677	358	28	2	47	95	36	17	1,260
Unit total	9,990	4,733	806	241	2,996	1,697	1,196	1,037	22,696

SECONDARY GROWING STOCK

County	Yellow pines 5 - 12 inches	Yellow pines 13 + inches	Other softwoods 5 - 12 inches	Other softwoods 13 + inches	Soft-textured hdwds. 5 - 12 inches	Soft-textured hdwds. 13 + inches	Hard-textured hdwds. 5 - 12 inches	Hard-textured hdwds. 13 + inches	All species
Baker	9	6	1	--	21	21	165	217	440
Ben Hill	13	--	1	--	39	46	24	9	132
Berrien	9	--	8	8	171	38	17	19	270
Brooks	4	2	1	6	76	50	48	94	281
Colquitt	11	--	--	--	130	69	9	11	230
Cook	9	6	3	--	108	61	30	23	240
Crisp	4	10	--	--	76	59	22	4	175
Decatur	41	14	--	--	42	127	[illegible]	121	[illegible]
Dooly	16	13	1	5	59	49	38	35	216
Early	6	--	5	--	108	[illegible]	112	201	[illegible]
Grady	35	14	--	--	148	127	48	157	[illegible]
Irwin	13	13	9	13	11	[illegible]	15	10	[illegible]
Lanier	10	15	4	2	90	[illegible]	21	10	[illegible]
Lowndes	2	--	11	--	106	142	86	130	477
Miller	16	--	1	--	19	[illegible]	[illegible]	[illegible]	[illegible]
Mitchell	4	--	--	--	8	23	11	105	151
Seminole	5	4	1	--	[illegible]	40	48	105	[illegible]
Thomas	7	16	--	--	114	61	41	178	417
Tift	7	4	3	3	116	41	[illegible]	[illegible]	[illegible]
Turner	16	8	2	1	77	45	25	3	177
Wilcox	35	19	--	2	55	47	39	51	248
Worth	18	38	11	--	138	64	13	22	304
Unit total	290	182	62	40	1,868	[illegible]	996	[illegible]	6,423

---

[1] Sound wood and bark. Limbs of sound sawlog-size hardwoods are included in secondary growing stock volumes.

DEFINITION OF TERMS

Land-Use Classes

Forest land. Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing saw timber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually saw timber), (b) economically available now or in the future, and (c) not withdrawn from timber use.

Noncommercial: Forest land which is (a) incapable of yielding wood products (usually saw timber) because of adverse site conditions, or (b) so inaccessible as to be permanently unavailable economically, and (c) not withdrawn for specific purposes.

Reserved: Public forest land that has been withdrawn from timber utilization through statute, ordinance, or administrative order.

Reserved commercial: Reserved forest land that otherwise qualifies as commercial forest land.

Reserved noncommercial: Reserved forest land that otherwise qualifies as noncommercial forest land.

Non-forest land. Includes land in any of the following classes:

Active agriculture: Land under cultivation or in pasture including farm yards and work lots.

Pasture: Land under fence used primarily for grazing purposes where the timber has been cleared to less than 10-percent stocking and a real attempt to produce a sod has been made.

Idle agriculture: Land previously cultivated or pastured but now idle or abandoned and having less than a ten-percent stocking of forest trees.

Marsh: Low, wet areas characterized by a heavy growth of grass and reeds and an absence of timber.

Urban and other areas: Includes towns, residential and industrial suburban areas, school yards, cemeteries, roads, railroads, power lines, and other rights-of-way.

Water. Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems are the criteria.

Pine types: Forests in which 50 percent or more of the stand is in pine species. The predominating pine species is used to determine the specific pine type.

Hardwood-pine types: Forests in which 50 percent or more of the stand is composed of hardwood species, but which contain 25 to 50 percent pine.

Lowland hardwood type: Forests on low, moist, or wet sites in which 50 percent or more of the stand is mixed hardwoods including tupelo, black gum, sweetgum, ash, oak, elm, soft maple, and cottonwood, except where pine comprises 25 to 50 percent of the stand.

Cypress type: Bottomland forests in which 50 percent or more of the stand is cypress, except where pines comprise 25 to 50 percent of the stand.

Oak-hickory type: Forests in which 50 percent or more of the stand is upland oaks, hickory, yellow-poplar, gums, and other hardwoods, except where pines comprise 25 to 50 percent of the stand.

Scrub oak type: Forests in which 50 percent or more of the stand is composed of scrub oak species, except where pines comprise 25 to 50 percent of the stand.

Stand-Size Classes

Saw timber. Stands containing at least 1,500 board feet net volume per acre, 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of saw-timber stands are recognized:

Large saw timber: Stands of saw timber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small saw timber: Stands of saw timber having 50 percent or less of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Pole timber. Stands failing to meet the minimum saw-timber specifications, but at least 10-percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings. Stands not qualifying as saw-timber or pole-timber stands, but having at least a 10-percent stocking with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas. Forest areas not qualifying as saw-timber, pole-timber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height). Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class. All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Growing Stock Classification

Primary Growing Stock.

Sound saw-timber trees: Live softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound saw timber.

Sound pole-timber trees: Straight-boled trees between 5.0 inches d.b.h. and saw-timber size.

Sound sapling-size trees: Trees 1.0 inch to 4.9 inches d.b.h. which will grow into pole- or saw-timber size trees of sound quality.

Secondary Growing Stock.

Sound cull trees: Live trees of all sizes that fail to qualify as sound timber because of poor form, excessive limbiness, or other sound defect. Volumes shown for sound cull trees also include the limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of sound saw-timber size hardwoods. Scrub oak and noncommercial species such as ironwood, blue beech, sassafras, etc., are included in this group.

Rotten cull trees: Live trees of all sizes that fail to qualify as sound timber because of rotten defect.

Species Groups

Yellow pines. Includes longleaf, slash, loblolly, pond, and shortleaf pine.

Other softwoods. Pond cypress, baldcypress, eastern redcedar, and Atlantic white cedar.

Soft-textured hardwoods. Black and tupelo gum, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, magnolia, sweetbay, and willow.

Hard-textured hardwoods. All of the oaks, hickories, ash, beech, elm, river birch, hackberry, sycamore, black locust, mulberry, black walnut, holly, dogwood, and persimmon.

Volume Estimates

Board-foot volume. The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound saw-timber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords. For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of sound saw-timber size hardwoods is included as sound cull material.

Volume in cubic feet. Same as volume shown in cords except bark is not included.

International 1/4-inch log rule. A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905\ (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord. A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 74 cubic feet of solid wood.

Gum Naval Stores Conditions

Round timber. A minimum of 15 longleaf and slash pine trees 9.0 inches d.b.h. or larger per acre that have not been worked for naval stores.

Working. Longleaf and slash pine trees that are now being worked for naval stores.

> Front-faced: Turpentine tree species on which the front or first face is now being worked.
>
> Back-faced: Turpentine tree species on which the front face has been worked out and on which a back (second or third, etc.) face is being worked.

Resting. Longleaf and slash pine trees with a worked-out or abandoned front face and on which back-facing has not been started.

Worked-out. Longleaf and slash pine trees on which two or more faces have been worked out and with no possibility of supporting another face.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest area. The sampling intensity of the 1951 survey was sufficient to provide an estimate of the total forest acreage in the Unit with a standard error of ± 1.0 percent. The probabilities are two out of three that the estimated forest acreage is within ± 1.0 percent of the actual acreage.

Cubic volume. The standard error of the 1951 net cubic-foot volume in the Unit was ± 2.8 percent. Here again, the probabilities are two out of three that the estimated volume does not vary from the actual volume by more than this percentage. The standard error of the volume in cords was not computed but it should be approximately the same.

Board-foot volume. The standard error of the 1951 estimate of board-foot volume in the Unit was ± 3.1 percent.

Use of county data. The tables showing area and timber volumes by county are included to permit grouping of the data in any desired combinations. The survey was designed so that the number of sample plots taken in each county would provide an estimate of the timber volume in cubic feet which would not exceed ± 15 percent. The actual range of error of the cubic volume estimates by county is from ± 7.0 percent to ± 14.7 percent. The errors of board-foot volume estimates by county range from ± 6.9 percent to ± 15.2 percent, and of forest area from ± 2.3 percent to ± 4.8 percent.

In spite of the accuracy limit set on volume estimates by county, comparison of individual county statistics may be subject to considerable error and should be avoided. Grouping the data for a number of counties will increase the reliability and make the combined estimates sufficiently accurate for general use. For example, grouping the timber volume data for four counties with errors ranging from 11 to 15 percent resulted in a total volume estimate with only 7 percent error.

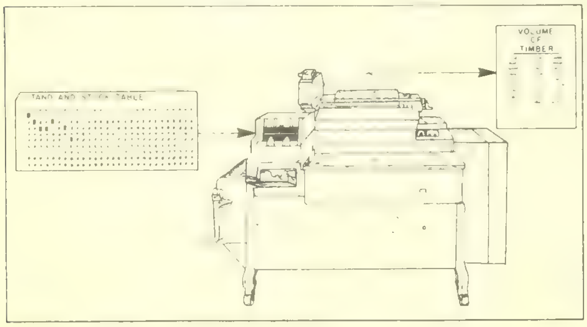
HOW THE FOREST INVENTORY IS MADE

The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:

1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, and mortality. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.

3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber drain is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia.

No. 22 - Southern Forests as a Source of Pulpwood.

No. 23 - 1946 Pulpwood Production by County in the Southeast.

No. 24 - Southern Pulpwood Production and the Timber Supply.

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina.

No. 26 - 1946 Commodity Drain by County from South Carolina Forests.

No. 27 - 1947 Pulpwood Production by County in the Southeast.

No. 28 - South Carolina's Forest Resources, 1947.

No. 29 - 1948 Pulpwood Production by County in the Southeast.

No. 30 - Forest Resources of Northeast Florida, 1949.

No. 31 - Forest Resources of Central Florida, 1949.

No. 32 - Forest Resources of Northwest Florida, 1949.

No. 33 - Forest Resources of South Florida, 1949.

No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948.

No. 35 - 1949 Pulpwood Production in the South.

No. 36 - Forest Statistics for Florida, 1949

OTHER BULLETINS

Pulpwood Production in the South, 1950. Forest Survey Release No. 69.

Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681.

The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3.

Agriculture--Asheville

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FOREST SURVEY RELEASE NO. 38 JULY 1952

1951 PULPWOOD PRODUCTION IN THE SOUTH

by
James W. Cruikshank, Chief
Division of Forest Economics

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, N. C.
and
SOUTHERN FOREST EXPERIMENT STATION
NEW ORLEANS, LA.
in cooperation with
SOUTHERN PULPWOOD CONSERVATION ASSOCIATION
ATLANTA, GA.

PREFACE

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act. The Southeastern Forest Experiment Station, Asheville, North Carolina, is responsible for the work in Virginia, North Carolina, South Carolina, Georgia, and Florida. The Southern Forest Experiment Station, New Orleans, Louisiana, directs the work in Alabama, Arkansas, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas.

The work of the Survey is divided into five major phases:

1. Inventory. Determination of the extent, location, and condition of forest lands, and the quantity, species, and quality of timber on these lands.

2. Growth. Determination of the current rate of timber growth.

3. Drain. Determination of the amount of industrial and domestic wood used, and the total loss resulting from fire, insects, disease, suppression, and other causes.

4. Requirements. Determination of the current and probable future requirements for forest products by all classes of consumers.

5. Policies and plans. Analysis of the relation of these findings to one another and to other economic factors as a basis for public and private policies and plans of forest land use and management.

ACKNOWLEDGMENT

The statistics presented herein are based upon reports furnished by the wood procurement officials representing 63 mills located in, or drawing wood from the South. Reports showed either production by county or by shipping points which were used to assign production to counties. County data are approximate, but totals for small groups of counties should have little error.

CONTENTS

Page

Text

Figures:

1. Pulp mills drawing wood from the South, 1951 ii
2. Pulpwood production in the South, 1951 1
3. Pine pulpwood production by county in the South, 1951. . . . 27
4. Hardwood pulpwood production by county in the South, 1951 . 28

Tables:

1. Pulpwood production in the South by state and species group, 1950 and 1951 2
2. Pulpwood production in the Southeastern Station territory by state and survey unit, 1951 3
3. Pulpwood production in the Southern Station territory by state and survey unit, 1951 4
4. Pulpwood production in Alabama, 1951 5
5. Pulpwood production in Arkansas, 1951 6
6. Pulpwood production in Florida, 1951 8
7. Pulpwood production in Georgia, 1951 10
8. Pulpwood production in Louisiana, 1951 13
9. Pulpwood production in Oklahoma, 1951 14
10. Pulpwood production in Mississippi, 1951 15
11. Pulpwood production in North Carolina, 1951 17
12. Pulpwood production in South Carolina, 1951 19
13. Pulpwood production in Tennessee, 1951 20
14. Pulpwood production in Texas, 1951 22
15. Pulpwood production in Virginia, 1951 23
16. Companies drawing pulpwood from the South, 1951 25

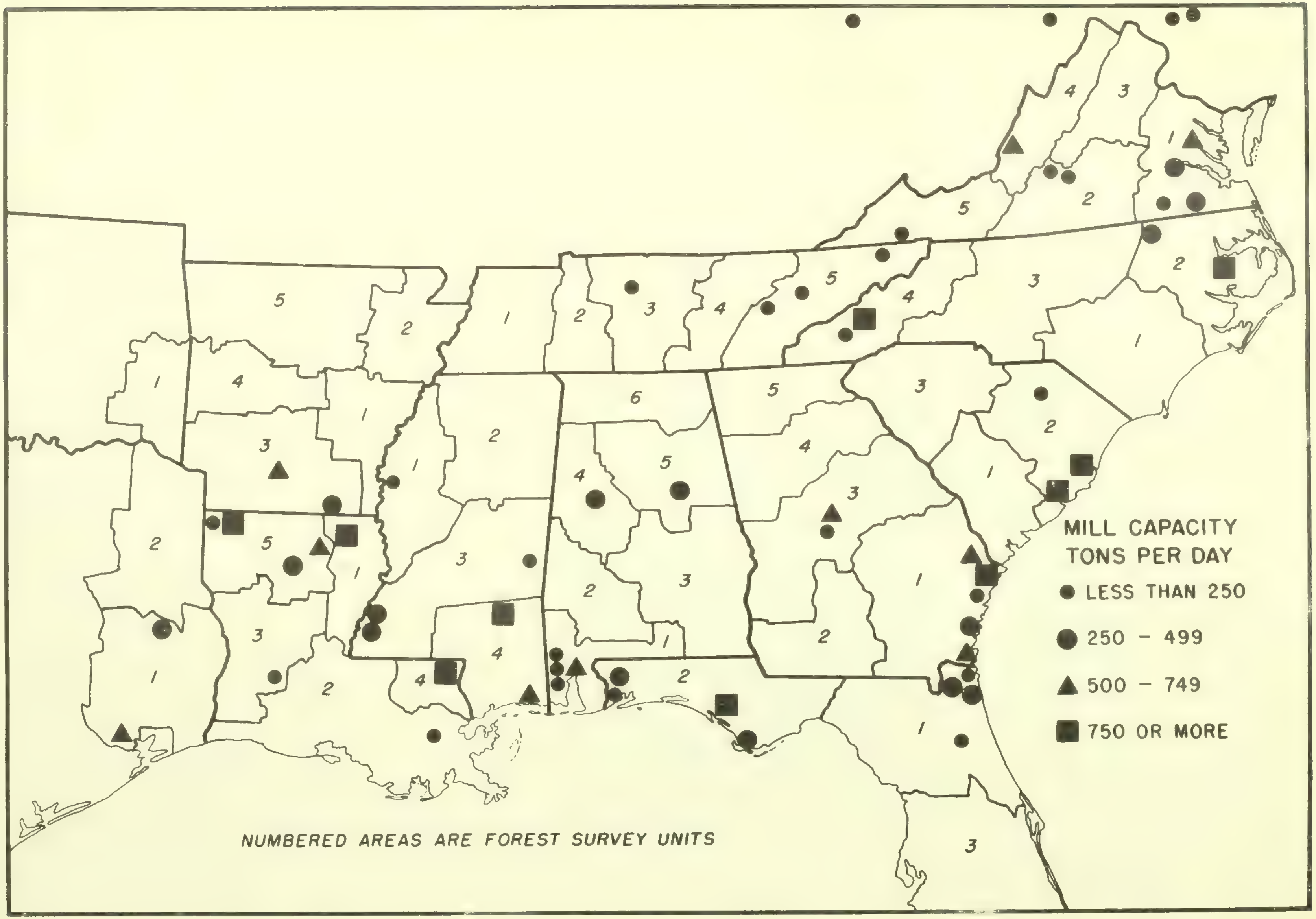

Figure 1.--Pulp mills drawing wood from the South, 1951. Numbered areas are Forest Survey units.

1951 PULPWOOD PRODUCTION IN THE SOUTH

In 1951 pulpwood production in the South was 14,061,100 cords, an increase of 13.1 percent above 1950, and 41.7 percent above 1949. The production of pine pulpwood was 12,442,200 cords, of hardwood 1,451,200 cords, and of dead chestnut only 167,700 cords. Pine production was 11.4 percent above 1950, hardwood 30.6 percent more, and dead chestnut 9.1 percent more.

Since total receipts of domestic pulpwood at all mills in the United States were 25,123,000 cords in 1951, the South produced 56 percent of all the pulpwood cut in the Nation. Among the southern states, Georgia was again the largest producer (fig. 2), accounting for 17 percent of the South's and 9 percent of the Nation's pulpwood cut. All of the southern states showed an increase in the volume of pulpwood production over 1950, with the largest increases in Virginia, North Carolina, Texas, and Louisiana.

Production per county varied from none to 131,600 cords. Thirty-three counties, distributed throughout the South, had cuts of over 60,000 cords apiece. The five leading counties were Baldwin in Alabama, Georgetown and Fairfield in South Carolina, Nassau in Florida, and Copiah in Mississippi.

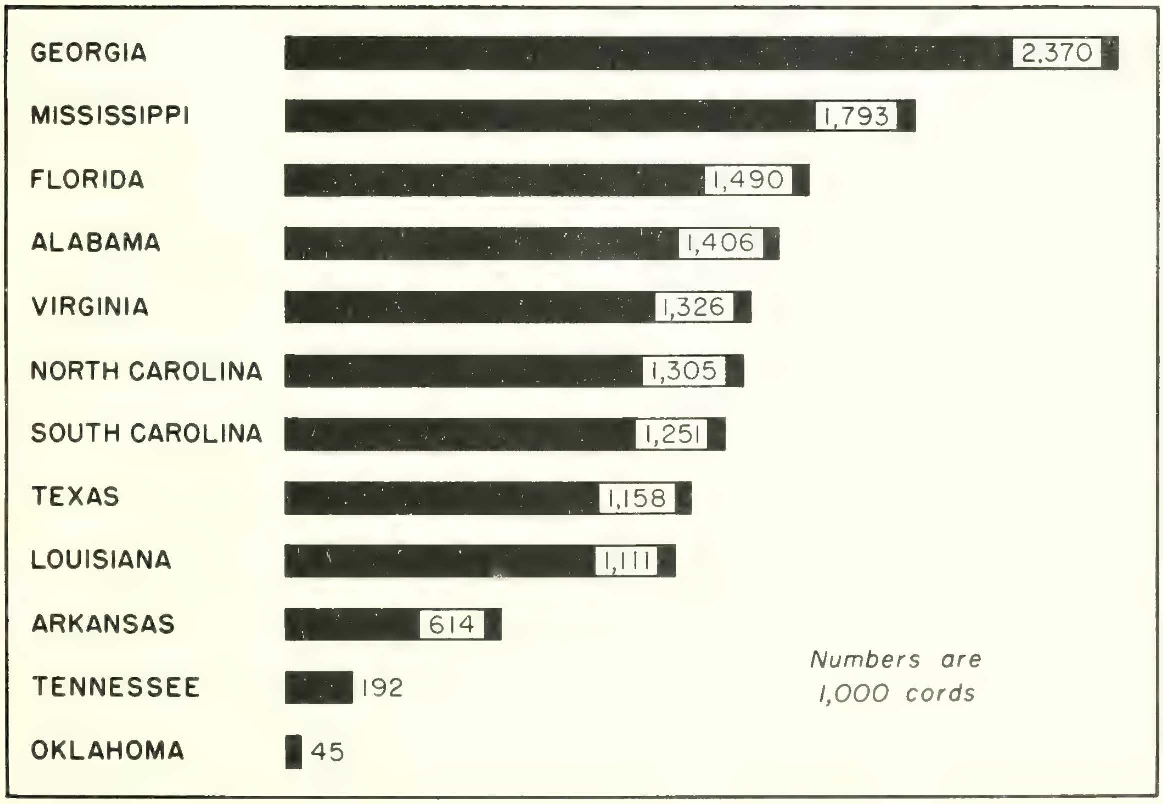

Figure 2.--Pulpwood production in the South, 1951

Table 1.--Pulpwood production in the South by state and species group, 1950 and 1951

(In thousand cords)

State	Percent change from 1950	1951			1950		
		Total	Pine	Hardwood[1]	Total	Pine	Hardwood[2]
Ala.	+ 6.4	1,406.2	1,392.2	14.0	1,321.2	1,313.4	7.8
Ark.	+ 1.7	613.8	521.8	92.0	603.7	542.3	61.4
Fla.	+ 7.6	1,490.3	1,489.2	1.1	1,384.7	1,384.5	0.2
Ga.	+ 6.7	2,370.1	2,278.8	91.3	2,221.3	2,120.8	100.5
La.	+25.8	1,111.0	997.2	113.8	883.3	825.5	57.8
Miss.	+ 7.7	1,793.4	1,412.2	381.2	1,665.9	1,388.8	277.1
N. C.	+27.4	1,304.6	1,053.6	251.0	1,024.0	790.4	233.6
Okla.	+14.9	44.6	44.6	--	38.8	38.8	--
S. C.	+ 5.8	1,251.0	1,105.2	145.8	1,182.4	1,068.6	113.8
Tenn.	+32.9	191.4	60.4	131.0	144.0	45.8	98.2
Tex.	+25.6	1,158.4	1,097.8	60.6	922.3	876.4	45.9
Va.	+27.0	1,326.3	989.2	337.1	1,044.1	775.1	269.0
All	+13.1	14,061.1	12,442.2	1,618.9	12,435.7	11,170.4	1,265.3

[1] Includes 167,700 cords of chestnut used for pulp.

[2] Includes 153,700 cords of chestnut used for pulp.

Table 2.--Pulpwood production in the Southeastern Station territory by state and survey unit, 1951

State	Forest survey unit	Species group			Total
		Pine	Hardwood	Chestnut[1]	
	Number	Std.cords	Std.cords	Std.cords	Std.cords
Virginia	[2] 1	383,281	23,277	--	406,558
	2	435,271	98,970	699	534,940
	3	111,684	70,275	2,348	184,307
	4	37,614	101,966	667	140,247
	5	21,355	17,581	21,345	60,281
	All units	989,205	312,069	25,059	1,326,333
North Carolina	1	418,278	27,425	--	445,703
	2	216,847	19,422	--	236,269
	3	275,173	22,016	596	297,785
	4	143,295	110,788	70,700	324,783
	All units	1,053,593	179,651	71,296	1,304,540
South Carolina	1	220,707	42,549	--	263,256
	2	438,198	70,297	--	508,495
	3	446,300	32,994	--	479,294
	All units	1,105,205	145,840	--	1,251,045
Georgia	1	1,074,550	66,538	--	1,141,088
	2	368,496	4,825	--	373,321
	3	519,095	2,320	--	521,415
	4	262,225	1,311	--	263,536
	5	54,477	3,556	12,750	70,783
	All units	2,278,843	78,550	12,750	2,370,143
Florida	1	904,644	1,026	--	905,670
	2	381,110	61	--	381,171
	3	178,488	37	--	178,525
	4	24,959	--	--	24,959
	All units	1,489,201	1,124	--	1,490,325
All states	-	6,916,047	717,234	109,105	7,742,386

[1] Includes only chestnut used for pulp.

[2] For location of survey units, see Figure 1.

Table 3.--Pulpwood production in the Southern Station territory by state and survey unit, 1951

State	Forest survey unit	Species group			Total
		Pine	Hardwood	Chestnut[1]	
	Number	Std.cords	Std.cords	Std.cords	Std.cords
Alabama	[2] 1	342,737	1,429	--	344,166
	2	255,914	2,491	--	258,405
	3	419,887	2,980	--	422,867
	4	203,428	7,084	--	210,512
	5	159,856	43	--	159,899
	6	10,358	--	--	10,358
	All units	1,392,180	14,027	--	1,406,207
Arkansas	1	21,259	36,426	--	57,685
	2	--	--	--	--
	3	402,268	50,101	--	452,369
	4	88,150	3,358	--	91,508
	5	10,096	2,134	--	12,230
	All units	521,773	92,019	--	613,792
Louisiana	1	14,409	43,715	--	58,124
	2	61,973	8,166	--	70,139
	3	248,763	8,708	--	257,471
	4	229,437	7,937	--	237,374
	5	442,611	45,242	--	487,853
	All units	997,193	113,768	--	1,110,961
Mississippi	1	22,087	28,647	--	50,734
	2	72,887	44,606	--	117,493
	3	854,024	188,960	--	1,042,984
	4	463,169	118,996	--	582,165
	All units	1,412,167	381,209	--	1,793,376
Oklahoma	All units	44,618	--	--	44,618
Tennessee	1	--	2,952	--	2,952
	2	255	4,693	6,168	11,116
	3	--	2,243	8,163	10,406
	4	607	30,887	15,422	46,916
	5	59,602	31,559	28,864	120,025
	All units	60,464	72,334	58,617	191,415
Texas	1	647,467	47,502	--	694,969
	2	429,312	12,678	--	441,990
	3	21,027	385	--	21,412
	All units	1,097,806	60,565	--	1,158,371
All states	-	5,526,201	733,922	58,617	6,318,740

[1] Includes only chestnut used for pulp.

[2] For location of survey units, see Figure 1.

Table 4.--Pulpwood production in Alabama, 1951

(In standard cords)

County	Pine	Hardwood	Total
Autauga	1,688	--	1,688
Baldwin	131,367	248	131,615
Barbour	14,498	--	14,498
Bibb	30,738	909	31,647
Blount	13,869	--	13,869
Bullock	18,030	--	18,030
Butler	38,114	492	38,606
Calhoun	5,031	--	5,031
Chambers	30,372	--	30,372
Cherokee	2,443	--	2,443
Chilton	9,476	2,239	11,715
Choctaw	40,763	571	41,334
Clarke	49,154	160	49,314
Clay	11,772	--	11,772
Cleburne	4,861	--	4,861
Coffee	26,265	--	26,265
Colbert	116	--	116
Conecuh	15,362	149	15,511
Coosa	28,990	--	28,990
Covington	26,073	142	26,215
Crenshaw	12,164	--	12,164
Cullman	3,564	--	3,564
Dale	10,401	--	10,401
Dallas	27,603	204	27,807
Dekalb	1,950	--	1,950
Elmore	36,676	--	36,676
Escambia	30,387	861	31,248
Etowah	7,286	--	7,286
Fayette	35,896	5,034	40,930
Franklin	1,256	--	1,256
Geneva	6,457	--	6,457
Greene	9,645	45	9,690
Hale	16,834	134	16,968
Henry	8,030	--	8,030
Houston	6,038	--	6,038
Jackson	342	--	342
Jefferson	3,841	--	3,841
Lamar	4,874	594	5,468
Lauderdale	--	--	--
Lawrence	133	--	133
Lee	37,068	--	37,068
Limestone	14	--	14
Lowndes	23,558	33	23,591
Macon	23,536	--	23,536
Madison	128	--	128
Marengo	40,352	553	40,905
Marion	9,715	255	9,970
Marshall	5,250	--	5,250

Table 4.--Alabama (cont.)

(In standard cords)

County	Pine	Hardwood	Total
Mobile	85,227	65	85,292
Monroe	48,226	606	48,832
Montgomery	33,004	--	33,004
Morgan	1,169	--	1,169
Perry	16,854	73	16,927
Pickens	17,945	40	17,985
Pike	17,728	--	17,728
Randolph	11,235	--	11,235
Russell	11,789	12	11,801
St. Clair	17,342	--	17,342
Shelby	22,778	--	22,778
Sumter	21,874	202	22,076
Talladega	10,124	--	10,124
Tallapoosa	27,392	--	27,392
Tuscaloosa	60,927	--	60,927
Walker	13,812	--	13,812
Washington	69,683	113	69,796
Wilcox	40,183	250	40,433
Winston	2,908	43	2,951
Total	1,392,180	14,027	1,406,207

Table 5.--Pulpwood production in Arkansas, 1951

(In standard cords)

County	Pine	Hardwood	Total
Arkansas	--	37	37
Ashley	8,677	8,882	17,559
Baxter	--	--	--
Benton	--	--	--
Boone	--	--	--
Bradley	22,033	1,731	23,764
Calhoun	34,964	242	35,206
Carroll	--	--	--
Chicot	--	3,068	3,068
Clark	30,674	6,672	37,346
Clay	--	--	--
Cleburne	--	--	--
Cleveland	9,183	630	9,813
Columbia	16,433	1,008	17,441
Conway	116	--	116
Craighead	--	--	--
Crawford	--	--	--
Crittenden	--	--	--
Cross	--	--	--
Dallas	23,342	1,575	24,917
Desha	--	8,215	8,215
Drew	6,601	8,026	14,627
Faulkner	1,537	126	1,663
Franklin	17	30	47
Fulton	--	--	--

Table 5.--Arkansas (cont.)

(In standard cords)

County	Pine	Hardwood	Total
Garland	12,303	792	13,095
Grant	57,731	1,021	58,752
Greene	--	--	--
Hempstead	13,744	1,113	14,857
Hot Spring	14,894	1,236	16,130
Howard	11,028	2,789	13,817
Independence	--	--	--
Izard	13	--	13
Jackson	--	--	--
Jefferson	19,044	1,803	20,847
Johnson	2,864	1,130	3,994
Lafayette	20,922	973	21,895
Lawrence	--	--	--
Lee	--	6,217	6,217
Lincoln	2,140	10,340	12,480
Little River	8,517	--	8,517
Logan	7,671	--	7,671
Lonoke	12	29	41
Madison	--	--	--
Marion	--	--	--
Miller	9,436	163	9,599
Mississippi	--	--	--
Monroe	24	--	24
Montgomery	1,874	17	1,891
Nevada	8,383	684	9,067
Newton	--	--	--
Ouachita	26,778	3,997	30,775
Perry	9,036	643	9,679
Phillips	39	6,717	6,756
Pike	26,180	1,663	27,843
Poinsett	--	--	--
Polk	19,460	--	19,460
Pope	4,404	309	4,713
Prairie	--	--	--
Pulaski	9,005	840	9,845
Randolph	--	--	--
St. Francis	--	--	--
Saline	15,278	577	15,855
Scott	5,553	--	5,553
Searcy	--	--	--
Sebastian	845	--	845
Sevier	11,202	--	11,202
Sharp	--	--	--
Stone	--	--	--
Union	41,546	7,696	49,242
Van Buren	1,067	--	1,067
Washington	--	--	--
White	78	539	617
Woodruff	--	--	--
Yell	7,125	489	7,614
Total	521,773	92,019	613,792

Table 6.--Pulpwood production in Florida, 1951

(In standard cords)

County	Pine	Hardwood	Total
Alachua	53,262	--	53,262
Baker	60,990	--	60,990
Bay	14,262	--	14,262
Bradford	55,473	--	55,473
Brevard	4,587	--	4,587
Broward	--	--	--
Calhoun	29,393	--	29,393
Charlotte	5,570	--	5,570
Citrus	6,731	--	6,731
Clay	50,534	27	50,561
Collier	568	--	568
Columbia	63,153	--	63,153
Dade	--	--	--
De Soto	10,746	--	10,746
Dixie	10,682	--	10,682
Duval	27,036	447	27,483
Escambia	49,211	--	49,211
Flagler	27,168	--	27,168
Franklin	6,791	--	6,791
Gadsden	27,256	24	27,280
Gilchrist	21,282	--	21,282
Glades	1,199	--	1,199
Gulf	10,039	--	10,039
Hamilton	62,265	28	62,293
Hardee	13,445	--	13,445
Hendry	8,144	--	8,144
Hernando	11,038	--	11,038
Highlands	5,050	--	5,050
Hillsborough	11,604	--	11,604
Holmes	20,107	--	20,107
Indian River	2,637	--	2,637
Jackson	53,959	-	53,959
Jefferson	11,927	--	11,927
Lafayette	4,558	--	4,558
Lake	13,515	10	13,525
Lee	6,752	--	6,752
Leon	24,058	-	24,058
Levy	22,828	--	22,828
Liberty	17,403	--	17,403
Madison	21,613	--	21,613
Manatee	7,998	27	8,025
Marion	86,167	43	86,210
Martin	2,726	--	2,726
Monroe	--	--	--
Nassau	115,883	319	116,202

Table 6.--Florida (cont.)

(In standard cords)

County	Pine	Hardwood	Total
Okaloosa	14,383	37	14,420
Okeechobee	7,974	--	7,974
Orange	7,217	--	7,217
Osceola	19,813	--	19,813
Palm Beach	--	--	--
Pasco	20,771	--	20,771
Pinellas	1,394	--	1,394
Polk	20,310	--	20,310
Putnam	48,306	--	48,306
Saint Johns	66,973	--	66,973
Saint Lucie	999	--	999
Santa Rosa	47,159	--	47,159
Sarasota	2,459	--	2,459
Seminole	8,325	--	8,325
Sumter	5,272	--	5,272
Suwannee	23,842	--	23,842
Taylor	33,349	--	33,349
Union	25,795	117	25,912
Volusia	20,088	45	20,133
Wakulla	9,920	--	9,920
Walton	17,612	--	17,612
Washington	27,630	--	27,630
Total	1,489,201	1,124	1,490,325

Table 7.--Pulpwood production in Georgia, 1951

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Appling	39,216	1,027	--	40,243
Atkinson	39,734	24	--	39,758
Bacon	18,667	86	--	18,753
Baker	309	--	--	309
Baldwin	9,140	34	--	9,174
Banks	943	--	--	943
Barrow	4,195	--	--	4,195
Bartow	12,410	--	--	12,410
Ben Hill	12,871	47	--	12,918
Berrien	14,819	120	--	14,939
Bibb	12,143	61	--	12,204
Bleckley	3,670	147	--	3,817
Brantley	33,456	1,413	--	34,869
Brooks	19,464	37	--	19,501
Bryan	48,001	928	--	48,929
Bulloch	43,453	--	--	43,453
Burke	11,944	--	--	11,944
Butts	10,642	--	--	10,642
Calhoun	5,799	--	--	5,799
Camden	74,021	5,599	--	79,620
Candler	10,761	16	--	10,777
Carroll	2,825	--	--	2,825
Catoosa	97	--	--	97
Charlton	74,707	251	--	74,958
Chatham	25,227	7,281	--	32,508
Chattahoochee	4,963	--	--	4,963
Chattooga	1,021	--	--	1,021
Cherokee	1,346	--	--	1,346
Clarke	3,671	893	--	4,564
Clay	2,842	--	--	2,842
Clayton	6,750	--	--	6,750
Clinch	63,225	25	--	63,250
Cobb	5,725	--	--	5,725
Coffee	34,748	298	--	35,046
Colquitt	14,794	47	--	14,841
Columbia	13,290	554	--	13,844
Cook	10,764	568	--	11,332
Coweta	15,287	--	--	15,287
Crawford	15,505	--	--	15,505
Crisp	6,904	50	--	6,954
Dade	13	--	--	13
Dawson	--	--	--	-
Decatur	34,131	383	--	34,514
De Kalb	5,645	--	--	5,645
Dodge	24,169	2,938	--	27,107
Dooly	3,911	93	--	4,004
Dougherty	6,838	--	--	6,838
Douglas	805	--	--	805
Early	16,616	146	--	16,762
Echols	11,669	--	--	11,669
Effingham	64,497	840	--	65,337
Elbert	14,212	155	--	14,367
Emanuel	28,677	32	--	28,709
Evans	21,521	--	--	21,521

Table 7.--Georgia (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Fannin	8,026	1,734	5,100	14,860
Fayette	4,505	--	--	4,505
Floyd	4,523	--	--	4,523
Forsyth	--	--	--	--
Franklin	1,696	--	--	1,696
Fulton	10,377	--	--	10,377
Gilmer	8,486	341	1,275	10,102
Glascock	750	--	--	750
Glynn	15,472	8,049	--	23,521
Gordon	4,412	--	--	4,412
Grady	21,986	142	--	22,128
Greene	17,630	--	--	17,630
Gwinnett	8,323	14	--	8,337
Habersham	1,498	1,042	--	2,540
Hall	9,249	--	--	9,249
Hancock	12,082	32	--	12,114
Haralson	8,436	--	--	8,436
Harris	21,385	78	--	21,463
Hart	1,919	--	--	1,919
Heard	--	--	--	--
Henry	6,767	66	--	6,833
Houston	6,923	--	--	6,923
Irwin	15,006	684	--	15,690
Jackson	16,175	--	--	16,175
Jasper	28,399	--	--	28,399
Jeff Davis	36,914	200	--	37,114
Jefferson	5,597	104	--	5,701
Jenkins	12,379	1,328	--	13,707
Johnson	5,868	--	--	5,868
Jones	28,074	--	--	28,074
Lamar	10,998	--	--	10,998
Lanier	16,722	58	--	16,780
Laurens	21,769	2,384	--	24,153
Lee	2,623	--	--	2,623
Liberty	31,362	4,302	--	35,664
Lincoln	3,755	--	--	3,755
Long	19,318	1,675	--	20,993
Lowndes	48,487	--	--	48,487
Lumpkin	--	--	--	--
McDuffie	6,558	--	--	6,558
McIntosh	44,755	13,785	--	58,540
Macon	9,153	--	--	9,153
Madison	9,133	--	--	9,133
Marion	7,244	42	--	7,286
Meriwether	25,268	--	--	25,268
Miller	9,954	--	--	9,954
Mitchell	23,652	87	--	23,739
Monroe	39,439	--	--	39,439
Montgomery	10,791	2,230	--	13,021
Morgan	14,940	13	--	14,953
Murray	992	--	--	992
Muscogee	7,665	--	--	7,665
Newton	15,967	--	--	15,967
Oconee	8,141	--	--	8,141

Table 7.--Georgia (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Oglethorpe	20,651	--	--	20,651
Paulding	194	--	--	194
Peach	3,073	--	--	3,073
Pickens	6,253	--	--	6,253
Pierce	6,786	--	--	6,786
Pike	11,367	--	--	11,367
Polk	6,576	183	--	6,759
Pulaski	2,557	102	--	2,659
Putnam	15,970	--	--	15,970
Quitman	1,378	--	--	1,378
Rabun	1,403	--	--	1,403
Randolph	5,196	26	--	5,222
Richmond	2,286	--	--	2,286
Rockdale	6,117	--	--	6,117
Schley	4,660	--	--	4,660
Screven	24,254	446	--	24,700
Seminole	14,762	678	--	15,440
Spalding	9,089	--	--	9,089
Stephens	805	--	--	805
Stewart	9,741	16	--	9,757
Sumter	11,818	--	--	11,818
Talbot	26,381	1,111	--	27,492
Taliaferro	10,717	--	--	10,717
Tattnall	16,900	178	--	17,078
Taylor	7,792	--	--	7,792
Telfair	20,298	2,505	--	22,803
Terrell	1,632	--	--	1,632
Thomas	37,140	853	--	37,993
Tift	9,672	337	--	10,009
Toombs	31,402	3,364	--	34,766
Towns	--	--	--	--
Treutlen	14,026	561	--	14,587
Troup	31,742	--	--	31,742
Turner	4,383	170	--	4,553
Twiggs	13,853	--	--	13,853
Union	--	439	6,375	6,814
Upson	16,043	--	--	16,043
Walker	572	--	--	572
Walton	1,842	--	--	1,842
Ware	46,397	186	--	46,583
Warren	2,448	--	--	2,448
Washington	20,165	--	--	20,165
Wayne	44,561	2,355	--	46,916
Webster	4,106	--	--	4,106
Wheeler	15,549	2,232	--	17,781
White	--	--	--	--
Whitfield	2,620	--	--	2,620
Wilcox	8,652	--	--	8,652
Wilkes	19,838	--	--	19,838
Wilkinson	8,083	--	--	8,083
Worth	23,497	325	--	23,822
Total	2,278,843	78,550	12,750	2,370,143

Table 8.--Pulpwood production in Louisiana, 1951

(In standard cords)

Parish	Pine	Hardwood	Total
Acadia	6,303	44	6,347
Allen	31,445	1,865	33,310
Ascension	532	30	562
Assumption	--	--	--
Avoyelles	2,059	152	2,211
Beauregard	18,447	--	18,447
Bienville	39,729	1,299	41,028
Bossier	36,177	1,126	37,303
Caddo	23,115	3,681	26,796
Calcasieu	13,997	--	13,997
Caldwell	32,618	1,672	34,290
Cameron	--	--	--
Catahoula	3,609	6,083	9,692
Claiborne	33,883	124	34,007
Concordia	1	12,181	12,182
De Soto	34,032	--	34,032
East Baton Rouge	862	1,196	2,058
East Carroll	-	1,429	1,429
East Feliciana	23,034	3,100	26,134
Evangeline	19,861	879	20,740
Franklin	914	2,852	3,766
Grant	26,030	922	26,952
Iberia	162	--	162
Iberville	--	--	-
Jackson	45,996	2,193	48,189
Jefferson	--	--	--
Jefferson Davis	6,166	1,052	7,218
Lafayette	-	--	--
Lafourche	--	-	--
La Salle	21,687	1,991	23,678
Lincoln	22,266	3,997	26,263
Livingston	80,602	352	80,954
Madison	--	8,763	8,763
Morehouse	9,541	4,634	14,175
Natchitoches	24,676	161	24,837
Orleans	150	--	150
Ouachita	26,143	1,905	28,048
Plaquemines	--	--	-
Pointe Coupe	--	458	458
Rapides	56,880	3,405	60,285
Red River	9,598	--	9,598
Richland	71	411	482
Sabine	44,636	76	44,712
St. Bernard	--	-	-
St. Charles	-	32	32
St. Helena	7,951	38	7,989
St. James	--	--	--
St. John the Baptist	--	--	--

Table 8.--Louisiana (cont.)

(In standard cords)

Parish	Pine	Hardwood	Total
St. Landry	1,665	203	1,868
St. Martin	--	--	--
St. Mary	--	351	351
St. Tammany	30,622	208	30,830
Tangipahoa	51,600	1,015	52,615
Tensas	--	4,681	4,681
Terrebonne	-	--	--
Union	45,807	26,485	72,292
Vermilion	--	--	--
Vernon	10,965	288	11,253
Washington	58,662	6,324	64,986
Webster	23,145	1,015	24,160
West Baton Rouge	-	--	-
West Carroll	273	2,681	2,954
West Feliciana	1,179	669	1,848
Winn	70,102	1,745	71,847
Total	997,193	113,768	1,110,961

Table 9.--Pulpwood production in Oklahoma, 1951

(In standard cords)

County[1]	Pine	Hardwood	Total
Adair	299	--	299
Atoka	912	--	912
Choctaw	1,621	--	1,621
Latimer	8,920	--	8,920
Leflore	13,575	--	13,575
McCurtain	7,153	--	7,153
Pushmataha	12,138	--	12,138
Total	44,618	-	44,618

[1] Counties with no pulpwood production are omitted.

Table 10.--Pulpwood production in Mississippi, 1951

(In standard cords)

County	Pine	Hardwood	Total
Adams	22,556	14,386	36,942
Alcorn	2,026	3,696	5,722
Amite	20,105	2,139	22,244
Attala	37,463	6,657	44,120
Benton	1,448	1,073	2,521
Bolivar	--	4,050	4,050
Calhoun	672	810	1,482
Carroll	2,175	1,039	3,214
Chickasaw	2,969	2,562	5,531
Choctaw	14,764	3,429	18,193
Claiborne	10,411	3,617	14,028
Clarke	38,013	9,925	47,938
Clay	1,152	1,461	2,613
Coahoma	--	2,582	2,582
Copiah	90,920	14,273	105,193
Covington	17,983	7,602	25,585
De Soto	--	--	--
Forrest	31,604	10,132	41,736
Franklin	74,060	11,609	85,669
George	16,641	7,556	24,197
Greene	44,803	5,354	50,157
Grenada	3,687	4,338	8,025
Hancock	27,979	--	27,979
Harrison	22,188	1,559	23,747
Hinds	44,669	10,883	55,552
Holmes	19,317	5,972	25,289
Humphreys	--	1,336	1,336
Issaquena	--	7,437	7,437
Itawamba	--	--	--
Jackson	36,847	99	36,946
Jasper	57,696	14,173	71,869
Jefferson	31,405	11,180	42,585
Jefferson Davis	17,510	4,530	22,040
Jones	41,491	13,883	55,374
Kemper	13,141	1,347	14,488
Lafayette	4,780	2,522	7,302
Lamar	11,033	4,846	15,879
Lauderdale	37,259	5,992	43,251
Lawrence	43,481	14,698	58,179
Leake	31,112	9,097	40,209
Lee	2,101	1,113	3,214
Leflore	445	1,180	1,625

Table 10.--Mississippi (cont.)

(In standard cords)

County	Pine	Hardwood	Total
Lincoln	45,116	8,281	53,397
Lowndes	786	125	911
Madison	8,641	1,058	9,699
Marion	35,333	12,251	47,584
Marshall	1,244	524	1,768
Monroe	1,357	281	1,638
Montgomery	5,782	4,400	10,182
Neshoba	13,595	3,657	17,252
Newton	34,376	8,540	42,916
Noxubee	7,735	1,578	9,313
Oktibbeha	9,522	2,810	12,332
Panola	16	1,748	1,764
Pearl River	27,608	9,942	37,550
Perry	20,275	10,438	30,713
Pike	30,361	9,017	39,378
Pontotoc	1,070	929	1,999
Prentiss	1,704	1,641	3,345
Quitman	-	100	100
Rankin	65,006	7,983	72,989
Scott	49,050	8,417	57,467
Sharkey	--	544	544
Simpson	40,623	7,201	47,824
Smith	5,329	1,860	7,189
Stone	19,572	2,597	22,169
Sunflower	--	--	--
Tallahatchie	80	203	283
Tate	--	--	--
Tippah	623	560	1,183
Tishomingo	8,796	3,052	11,848
Tunica	--	-	--
Union	1,827	757	2,584
Walthall	21,160	8,176	29,336
Warren	1,501	3,492	4,993
Washington	--	630	630
Wayne	27,661	5,333	32,994
Webster	3,121	2,919	6,040
Wilkinson	25,226	10,804	36,030
Winston	20,156	5,286	25,442
Yalobusha	1,265	2,817	4,082
Yazoo	744	1,121	1,865
Total	1,412,167	381,209	1,793,376

Table 11.--Pulpwood production in North Carolina, 1951

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Alamance	690	23	--	713
Alexander	453	--	--	453
Alleghany	--	--	1,095	1,095
Anson	14,846	2,215	--	17,061
Ashe	--	2,798	2,620	5,418
Avery	--	773	841	1,614
Beaufort	25,830	249	--	26,079
Bertie	14,178	2,396	--	16,574
Bladen	75,124	9,738	--	84,862
Brunswick	44,200	6,949	--	51,149
Buncombe	25,995	14,253	4,363	44,611
Burke	18,328	13,066	--	31,394
Cabarrus	609	179	--	788
Caldwell	8,057	2,729	--	10,786
Camden	35	36	--	71
Carteret	20,446	2	--	20,448
Caswell	1,608	--	--	1,608
Catawba	5,010	16	--	5,026
Chatham	19,306	121	--	19,427
Cherokee	18,573	17,801	2,788	39,162
Chowan	106	--	--	106
Clay	2,406	1,774	179	4,359
Cleveland	9,051	1,316	--	10,367
Columbus	38,593	2,765	--	41,358
Craven	22,800	2,325	--	25,125
Cumberland	15,192	484	--	15,676
Currituck	--	--	--	--
Dare	--	--	--	--
Davidson	369	865	--	1,234
Davie	5,523	98	--	5,621
Duplin	23,069	252	-	23,321
Durham	10,247	39	--	10,286
Edgecombe	425	--	--	425
Forsyth	554	157	--	711
Franklin	23,189	72	--	23,261
Gaston	4,998	382	--	5,380
Gates	22,824	5,492	--	28,316
Graham	1,399	2,612	64	4,075
Granville	5,397	16	--	5,413
Greene	1,097	-	--	1,097
Guilford	381	857	--	1,238
Halifax	28,791	1,847	--	30,638
Harnett	2,550	57	--	2,607
Haywood	6,160	3,915	1,580	11,655
Henderson	11,958	8,695	1,080	21,733
Hertford	21,758	2,098	--	23,856
Hoke	6,898	--	--	6,898
Hyde	142	--	-	142
Iredell	8,211	758	--	8,969
Jackson	4,909	9,489	19,769	34,167
Johnston	10,508	--	-	10,508

Table 11.--North Carolina (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Jones	8,316	72	--	8,388
Lee	3,566	208	--	3,774
Lenoir	12,370	2	--	12,372
Lincoln	1,078	143	--	1,221
McDowell	5,869	5,183	1,736	12,788
Macon	--	1,846	14,022	15,868
Madison	4,681	4,493	4,645	13,819
Martin	2,421	920	--	3,341
Mecklenberg	15,844	4,507	--	20,351
Mitchell	527	6,815	6,161	13,503
Montgomery	10,288	33	--	10,321
Moore	15,828	8	--	15,836
Nash	7,253	159	--	7,412
New Hanover	12,051	329	--	12,380
Northampton	40,551	3,898	--	44,449
Onslow	25,093	1,772	--	26,865
Orange	1,217	25	--	1,242
Pamlico	2,724	--	--	2,724
Pasquotank	--	--	--	-
Pender	35,804	3,632	--	39,436
Perquimans	-	--	--	--
Person	205	--	--	205
Pitt	4,709	--	--	4,709
Polk	674	270	--	944
Randolph	30	530	--	560
Richmond	10,559	65	--	10,624
Robeson	31,158	632	--	31,790
Rockingham	2,505	--	--	2,505
Rowan	3,894	177		4,071
Rutherford	22,952	6,156	--	29,108
Sampson	24,881	460	--	25,341
Scotland	5,853	--	--	5,853
Stanly	4,212	43	--	4,255
Stokes	--	--	--	--
Surry	6,077	43	596	6,716
Swain	6,485	5,904	3,427	15,816
Transylvania	3,626	4,136	5,551	13,313
Tyrrell	-	--	--	--
Union	10,778	453	--	11,231
Vance	10,989	--	--	10,989
Wake	32,070	423	--	32,493
Warren	41,918	2,099	--	44,017
Washington	1,592	--	--	1,592
Watauga	--	--	--	--
Wayne	15,568	--	--	15,568
Wilkes	24,291	167	759	25,217
Wilson	262	--	--	262
Yadkin	--	--	--	--
Yancey	31	4,339	20	4,390
Total	1,053,593	179,651	71,296	1,304,540

Table 12.--Pulpwood production in South Carolina, 1951

(In standard cords)

County	Pine	Hardwood	Total
Abbeville	11,042	107	11,149
Aiken	20,703	3,036	23,739
Allendale	10,986	5,347	16,333
Anderson	4,547	--	4,547
Bamberg	4,228	3,840	8,068
Barnwell	27,848	3,035	30,883
Beaufort	22,339	667	23,006
Berkeley	50,312	8,234	58,546
Calhoun	4,924	1,079	6,003
Charleston	23,533	1,183	24,716
Cherokee	4,098	--	4,098
Chester	50,260	4,199	54,459
Chesterfield	11,073	11,501	22,574
Clarendon	13,220	4,724	17,944
Colleton	20,081	3,109	23,190
Darlington	12,055	2,345	14,400
Dillon	3,253	235	3,488
Dorchester	26,723	5,022	31,745
Edgefield	25,557	181	25,738
Fairfield	88,024	10,669	98,693
Florence	9,668	284	9,952
Georgetown	109,938	13,301	123,239
Greenville	11,533	260	11,793
Greenwood	39,795	331	40,126
Hampton	36,384	7,277	43,661
Horry	85,354	8,214	93,568
Jasper	18,334	525	18,859
Kershaw	30,607	7,444	38,051
Lancaster	17,818	380	18,198
Laurens	24,062	275	24,337
Lee	4,825	2,530	7,355
Lexington	15,742	2,291	18,033
Marion	7,377	605	7,982
Marlboro	1,579	789	2,368
McCormick	31,709	979	32,688
Newberry	43,641	8,618	52,259
Oconee	5,437	154	5,591
Orangeburg	12,415	7,321	19,736
Pickens	1,650	372	2,022
Richland	30,504	4,110	34,614
Saluda	6,203	98	6,301
Spartanburg	24,633	2,218	26,851
Sumter	10,293	499	10,792
Union	40,898	2,426	43,324
Williamsburg	34,607	4,798	39,405
York	15,393	1,228	16,621
Total	1,105,205	145,840	1,251,045

Table 13.--Pulpwood production in Tennessee, 1951

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Anderson	677	608	281	1,566
Bedford	--	--	332	332
Benton	--	104	--	104
Bledsoe	--	--	--	--
Blount	8,533	585	370	9,488
Bradley	5,624	396	--	6,020
Campbell	77	509	574	1,160
Cannon	--	--	--	--
Carroll	-	1,382	--	1,382
Carter	--	340	716	1,056
Cheatham	--	--	--	--
Chester	--	--	--	--
Claiborne	777	825	899	2,501
Clay	--	--	--	--
Cocke	5,949	4,261	4,485	14,695
Coffee	-	2,243	5,281	7,524
Crockett	--	--	--	--
Cumberland	--	8,128	--	8,128
Davidson	--	--	--	--
Decatur	--	--	--	--
De Kalb	--	--	--	--
Dickson	--	--	38	38
Dyer	--	--	--	--
Fayette	--	-	--	--
Fentress	--	3,987	163	4,150
Franklin	-	940	812	1,752
Gibson	--	--	--	--
Giles	--	--	55	55
Grainger	88	19	20	127
Greene	--	--	181	181
Grundy	--	355	--	355
Hamblen	--	--	--	--
Hamilton	206	28	--	234
Hancock	--	292	659	951
Hardeman	--	651	--	651
Hardin	255	54	--	309
Hawkins	156	463	417	1,036
Haywood	--	--	--	--
Henderson	--	558	--	558
Henry	--	186	-	186
Hickman	--	292	720	1,012
Houston	--	--	--	--
Humphreys	--	--	55	55
Jackson	--	--	--	--
Jefferson	117	32	-	149
Johnson	--	219	4,425	4,644
Knox	347	1,386	683	2,416
Lake	--	--	--	--

Table 13.--Tennessee (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Lauderdale	--	--	--	--
Lawrence	--	3,451	5,374	8,825
Lewis	--	792	19	811
Lincoln	--	--	203	203
Loudon	--	--	57	57
McMinn	18,809	3,696	250	22,755
McNairy	--	--	--	--
Macon	--	--	--	--
Madison	--	175	--	175
Marion	--	--	--	--
Marshall	--	--	--	--
Maury	--	--	--	--
Meigs	--	--	--	--
Monroe	10,272	3,173	--	13,445
Montgomery	--	--	--	--
Moore	--	--	--	--
Morgan	344	119	--	463
Obion	--	--	--	--
Overton	--	1,269	277	1,546
Perry	--	--	--	--
Pickett	--	--	--	--
Polk	5,006	1,501	391	6,898
Putnam	--	7,225	8,554	15,779
Rhea	1,916	891	--	2,807
Roane	836	6,627	11,004	18,467
Robertson	--	--	19	19
Rutherford	--	--	55	55
Scott	186	4,706	58	4,950
Sequatchie	--	--	--	--
Sevier	--	950	844	1,794
Shelby	--	--	--	--
Smith	--	--	1,292	1,292
Stewart	--	--	--	--
Sullivan	63	1,686	1,524	3,273
Sumner	--	--	850	850
Tipton	--	--	--	--
Trousdale	--	--	--	-
Unicoi	178	730	698	1,606
Union	48	1,828	844	2,720
Van Buren	--	--	--	--
Warren	--	3,649	2,271	5,920
Washington	--	1,023	116	1,139
Wayne	--	--	--	--
Weakley	--	--	--	--
White	--	--	2,713	2,713
Williamson	--	--	--	--
Wilson	--	--	38	38
Total	60,464	72,334	58,617	191,415

Table 14.- Pulpwood production in Texas, 1951

(In standard cords)

County[1]	Pine	Hardwood	Total
Anderson	20,392	2,154	22,546
Angelina	41,713	--	41,713
Bowie	23,245	152	23,397
Camp	6,424	--	6,424
Cass	23,833	280	24,113
Chambers	3,007	--	3,007
Cherokee	39,573	4,214	43,787
Franklin	1,776	--	1,776
Gregg	18,036	--	18,036
Grimes	14,413	385	14,798
Hardin	28,486	2,361	30,847
Harris	53,034	573	53,607
Harrison	46,619	--	46,619
Henderson	1,932	--	1,932
Houston	65,549	1,768	67,317
Jasper	45,390	7,344	52,734
Jefferson	1,861	355	2,216
Liberty	76,300	1,177	77,477
Marion	16,796	446	17,242
Montgomery	77,062	7,664	84,726
Morris	12,151	83	12,234
Nacogdoches	44,071	2,187	46,258
Newton	24,784	5,081	29,865
Orange	16,373	190	16,563
Panola	56,920	593	57,513
Polk	42,006	5,888	47,894
Red River	8,368	--	8,368
Rusk	21,087	542	21,629
Sabine	11,528	170	11,698
San Augustine	45,340	581	45,921
San Jacinto	13,486	1,265	14,751
Shelby	45,793	447	46,240
Smith	7,990	730	8,720
Titus	3,985	--	3,985
Trinity	39,318	--	39,318
Tyler	24,998	--	24,998
Upshur	20,072	850	20,922
Walker	40,239	13,085	53,324
Waller	1,675	--	1,675
Wood	12,181	--	12,181
Total	1,097,806	60,565	1,158,371

[1] Counties with no pulpwood production are omitted.

Table 15.--Pulpwood production in Virginia, 1951

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Accomac	15,576	--	--	15,576
Albemarle	21,564	7,507	510	29,581
Alleghany	5,429	33,178	210	38,817
Amelia	62,560	6,780	--	69,340
Amherst	25,754	21,906	431	48,091
Appomattox	9,171	4,455	18	13,644
Arlington	15	--	--	15
Augusta	1,456	3,353	-	4,809
Bath	2,222	20,028	33	22,283
Bedford	48,819	14,349	543	63,711
Bland	-	--	--	--
Botetourt	8,768	13,783	--	22,551
Brunswick	49,420	7,962	--	57,382
Buchanan	--	--	--	--
Buckingham	51,670	44,082	--	95,752
Campbell	28,729	5,025	60	33,814
Caroline	1,081	34	--	1,115
Carroll	774	19	1,193	1,986
Charles City	14,659	81	--	14,740
Charlotte	49,751	2,438	--	52,189
Chesterfield	9,187	179	--	9,366
Clarke	120	8	--	128
Craig	3,708	8,965	401	13,074
Culpeper	9,630	3,116	311	13,057
Cumberland	23,279	4,259	--	27,538
Dickenson	--	--	--	-
Dinwiddie	22,666	488	--	23,154
Elizabeth City	9	-	-	9
Essex	5,402	-	--	5,402
Fairfax	389	84	--	473
Fauquier	1,154	267	49	1,470
Floyd	--	--	764	764
Fluvanna	21,330	12,400	--	33,730
Franklin	18,436	1,923	--	20,359
Frederick	4,132	905	--	5,037
Giles	68	121	47	236
Gloucester	18,421	--	-	18,421
Goochland	10,907	2,674	-	13,581
Grayson		3,461	2,774	6,235
Greene	255	--	36	291
Greensville	29,675	2,206	--	31,881
Halifax	9,275	182	--	9,457
Hanover	1,231	426	--	1,657
Henrico	7,998	261	-	8,259
Henry	12,378	12	--	12,390
Highland	613	3,006	--	3,619
Isle of Wight	13,093	2,300	--	15,393
James City	6,328	158	--	6,486
King and Queen	17,292	--	--	17,292
King George	195	83	--	278
King William	29,589	--	--	29,589

Table 15.--Virginia (cont.)

(In standard cords)

County	Pine	Hardwood	Chestnut	Total
Lancaster	7,513	--	--	7,513
Lee	--	3,026	2,316	5,342
Loudoun	35	-	--	35
Louisa	6,058	5,164	--	11,222
Lunenburg	6,149	124	--	6,273
Madison	2,832	153	205	3,190
Mathews	1,630	-	--	1,630
Mecklenburg	14,813	830	--	15,643
Middlesex	11,090	-	--	11,090
Montgomery	4,846	2,114	5,012	11,972
Nansemond	15,273	2,438	--	17,711
Nelson	17,540	16,544	695	34,779
New Kent	20,071	651	--	20,722
Norfolk	947	--	--	947
Northampton	2,218	--	--	2,218
Northumberland	2,558	-	--	2,558
Nottoway	17,570	3,135	--	20,705
Orange	6,363	972	111	7,446
Page	599	157	--	756
Patrick	--	--	78	78
Pittsylvania	29,402	620	--	30,022
Powhatan	18,039	5,587	-	23,626
Prince Edward	33,353	5,169	--	38,522
Prince George	10,325	1,702	--	12,027
Prince William	1,192	19	--	1,211
Princess Anne	407	--	--	407
Pulaski	293	15	23	331
Rappahannock	378	--	--	378
Richmond	8,600	--	--	8,600
Roanoke	1,333	40	23	1,396
Rockbridge	4,827	13,194	--	18,021
Rockingham	820	540	--	1,360
Russell	--	702	-	702
Scott	--	5,497	3,435	8,932
Shenandoah	1,121	13	--	1,134
Smyth	113	250	976	1,339
Southampton	22,220	3,499	--	25,719
Spotsylvania	1,425	48	--	1,473
Stafford	1,983	188	--	2,171
Surry	10,417	128	--	10,545
Sussex	20,071	424	--	20,495
Tazewell	--	--	--	--
Warren	1,970	629	--	2,599
Warwick	2,085	257	--	2,342
Washington	--	5,637	2,228	7,865
Westmoreland	1,613	--	--	1,613
Wise	--	65	2,530	2,595
Wythe	157	74	47	278
York	4,778	--	--	4,778
Total	989,205	312,069	25,059	1,326,333

Table 16.--Companies drawing pulpwood from the South, 1951

State	Name of company	Plant location	Pulp capacity 24 hrs.[1] Tons
ALABAMA	Coosa River Newsprint Co.	Coosa Pines	454
	Gulf States Paper Corp.	Tuscaloosa	400
	Hollingsworth & Whitney Co.	Mobile	225
	International Paper Co.	Mobile	500
	National Gypsum Co.	Mobile	15
	Ruberoid Co.	Mobile	60
ARKANSAS	Crossett Paper Mills	Crossett	375
	International Paper Co.	Camden	540
FLORIDA	Armstrong Cork Co.	Pensacola	130
	Container Corp. of America	Fernandina	200
	Hudson Pulp & Paper Corp.	Palatka	200
	International Paper Co.	Panama City	1,450
	National Container Corp.	Jacksonville	425
	Rayonier, Inc.	Fernandina	275
	St. Joe Paper Co.	Port St. Joe	400
	St. Regis Paper Co.	Pensacola	475
GEORGIA	Armstrong Cork Co.	Macon	200
	Brunswick Pulp & Paper Co.	Brunswick	[illegible]
	Certain-teed Products Corp.	Savannah	
	Macon Kraft Co.	Macon	[illegible]
	St. Marys Kraft Corp.	St. Marys	500
	Southern Paperboard Corp.	Savannah	250
	Union Bag & Paper Corp.	Savannah	1,400
LOUISIANA	Bird & Son	Shreveport	25
	The Brown Paper Mill Co., Inc.	West Monroe	550
	Calcasieu Paper Co., Inc.	Elizabeth	200
	Flintkote Co.	New Orleans	50
	Gaylord Container Corp.	Bogalusa	912
	International Paper Co.	Bastrop	1,050
	International Paper Co.	Spring Hill	1,450
	Southern Advance Bag & Paper Co.	Hodge	[illegible]
MARYLAND	West Virginia Pulp & Paper Co.	Luke	175

Table 15.--Companies drawing pulpwood from the South, 1951 (cont.)

State	Name of company	Plant location	Pulp capacity 24 hrs.[1/]
			Tons
MISSISSIPPI	Flintkote Co.	Meridian	150
	International Paper Co.	Moss Point	560
	International Paper Co.	Natchez	300
	Masonite Corp.	Laurel	900
	Johns-Manville Products Corp.	Natchez	300
	United States Gypsum Co.	Greenville	180
NORTH CAROLINA	Champion Paper & Fibre Co.	Canton	800
	Halifax Paper Co., Inc.	Roanoke Rapids	260
	Mead Corp.	Sylva	160
	North Carolina Pulp Co.	Plymouth	800
	Riegel-Carolina Corp.	Acme	200
OHIO	Mead Corp.	Chillicothe	125
PENNSYLVANIA	Certain-teed Products Corp.	York	48
	P. H. Glatfelter Co.	Spring Grove	100
SOUTH CAROLINA	International Paper Co.	Georgetown	1,715
	Sonoco Products Co.	Hartsville	80
	West Virginia Pulp & Paper Co.	Charleston	800
TENNESSEE	Mead Corp.	Harriman	[illegible]
	Mead Corp.	Kingsport	140
	Mead Corp.	Nashville	62
	Southern Extract Co.	Knoxville	67
TEXAS	Champion Paper & Fibre Co.	Pasadena	510
	Southland Paper Mills, Inc.	Lufkin	480
VIRGINIA	Camp Manufacturing Co., Inc.	Franklin	330
	Chesapeake Corp. of Virginia	West Point	500
	Continental Can Co., Inc.	Hopewell	400
	Mead Corp.	Lynchburg	125
	Mead Corp. Columbian Division	Bristol	85
	National Container Corp. of Virginia	Big Island	150
	Southern Johns-Manville Products Corp.	Jarratt	200
	West Virginia Pulp & Paper Co.	Covington	600

[1/] Southern Pulp and Paper Manufacturer, Vol. 14, No. 10, Oct. 1, 1951 and other sources.

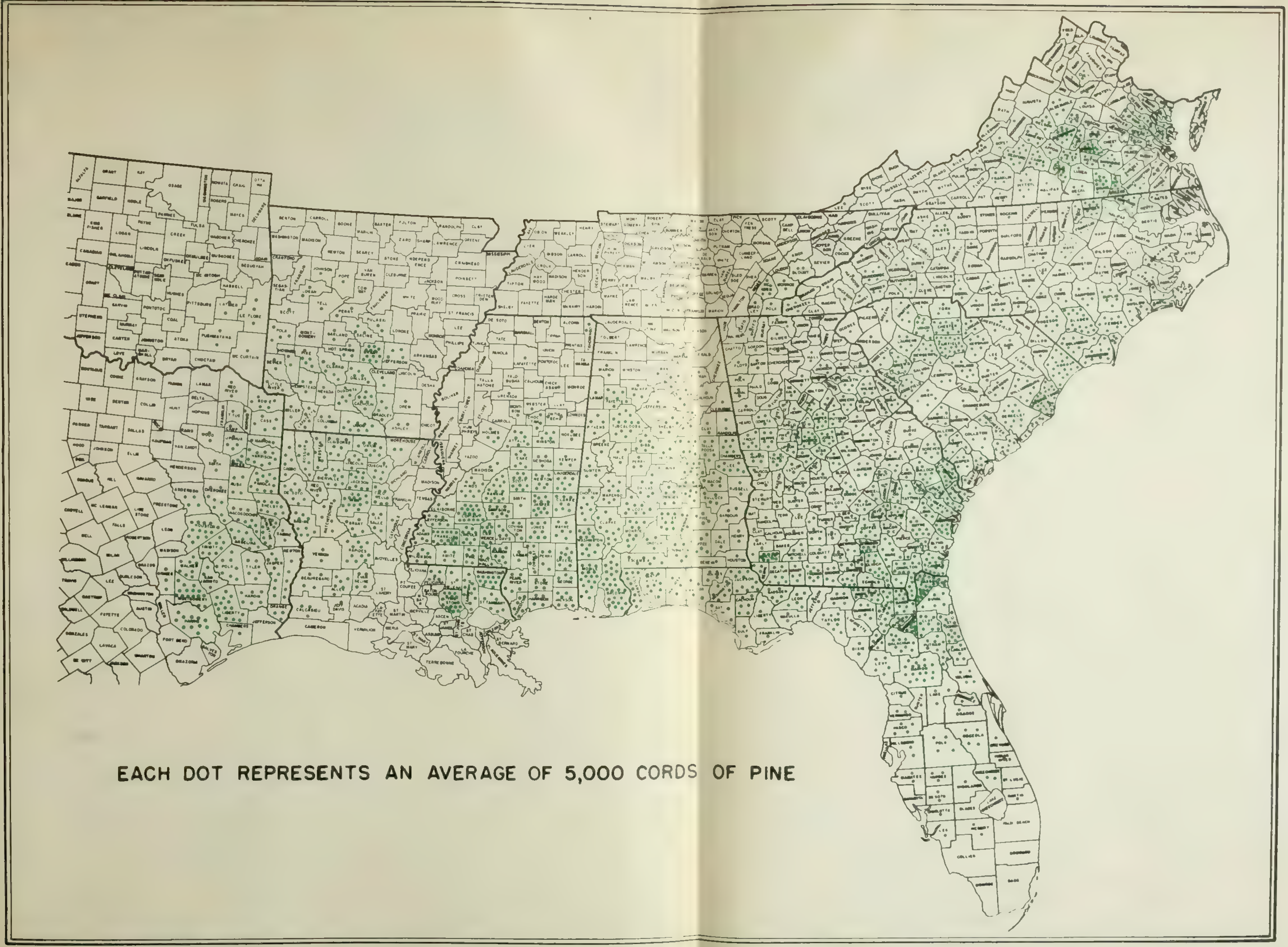

Figure 3.--Pine pulpwood production by county in the South, 1951

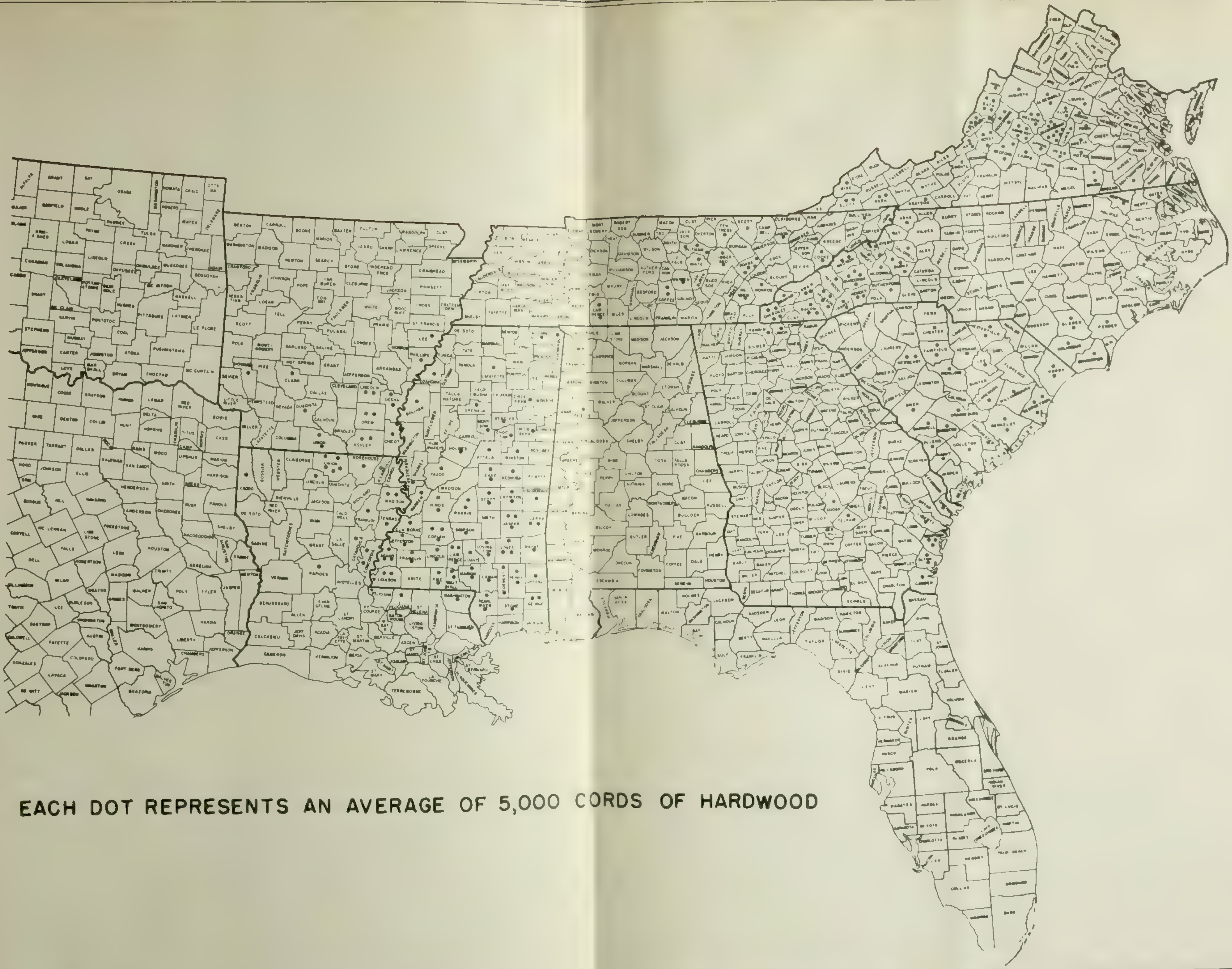

Figure 4.--Hardwood pulpwood production by county in the South, 1951

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FOREST SURVEY RELEASE NO. 39 OCTOBER 1952

FOREST STATISTICS
FOR
SOUTHEAST GEORGIA, 1952

by

James F. McCormack, Forester
Division of Forest Economics

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA
E. L. Demmon, Director

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

The forest resources of the State of Georgia were first inventoried by the Forest Survey during the period 1934-36, and these findings have been published. Since that time, the effects of timber cutting, forest growth, changes in land use, better management practices, and other factors have caused changes in the growing stock which can only be measured accurately by on-the-ground surveys. A resurvey of the forest resources in Georgia was started in July 1950. This progress report presents area and timber volume statistics compiled from the resurvey for Southeast Georgia, designated as Survey Unit No. 1.

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CONTENTS

Page

1952 HIGHLIGHTS AND SIGNIFICANT CHANGES - 1

TABLES FOR THE SURVEY UNIT, 1952

AREA

1. Gross area by broad use class - 7
2. Ownership of land - 8
3. Commercial forest area by forest type and stand-size class - - - - 9

NET VOLUME OF SAW TIMBER

4. By species and stand-size class - - - - - - - - - - - - - - - - - - - 10
5. By species and diameter class - 11
6. By forest type and stand-size class - - - - - - - - - - - - - - - - - 12

NET VOLUME OF ALL TIMBER (in thousand cords)

7. By species and stand-size class - - - - - - - - - - - - - - - - - - - 13
8. By species and diameter class - 14
9. By species and class of material - - - - - - - - - - - - - - - - - - 15
10. By forest type and stand-size class - - - - - - - - - - - - - - - - - 16

NET VOLUME OF POLE-TIMBER TREES (in thousand cords)

11. By forest type and stand-size class - - - - - - - - - - - - - - - - - 17

NET VOLUME OF ALL TIMBER (in million cubic feet)

12. By species and diameter class - 18
13. By species and class of material - - - - - - - - - - - - - - - - - - 19

AVERAGE VOLUME PER ACRE

14. Of saw timber by forest type, species group, and stand-size class- 20
15. Of all trees by forest type, species group, and stand-size class - 21

NAVAL STORES

16. Number of turpentine pine trees by working status and tree size - 22
17. Area of turpentine pine types by working status - - - - - - - - - 22
18. Area of stump land and tonnage of wood naval stores stumps - - - - 23

GENERAL

19. Number of trees by species group, quality class, and tree size - - 24
20. Area of seedling, sapling, and poorly stocked stands by plantability class - 25
21. Stocking on commercial forest area by forest type and tree size class - 26

TABLES FOR COUNTIES, 1952

22. County area by broad use class - - - - - - - - - - - - - - - - - - - 27
23. Ownership of commercial forest land - - - - - - - - - - - - - - - - - 28
24. Net volume of saw timber by species group - - - - - - - - - - - - - 29
25. Net volume of saw timber by broad species group and diameter class group - 30
26. Net volume of all timber by pulping species group and tree diameter group - 31

DEFINITION OF TERMS - 32

RELIABILITY OF THE DATA - 37

HOW THE FOREST INVENTORY IS MADE - 38

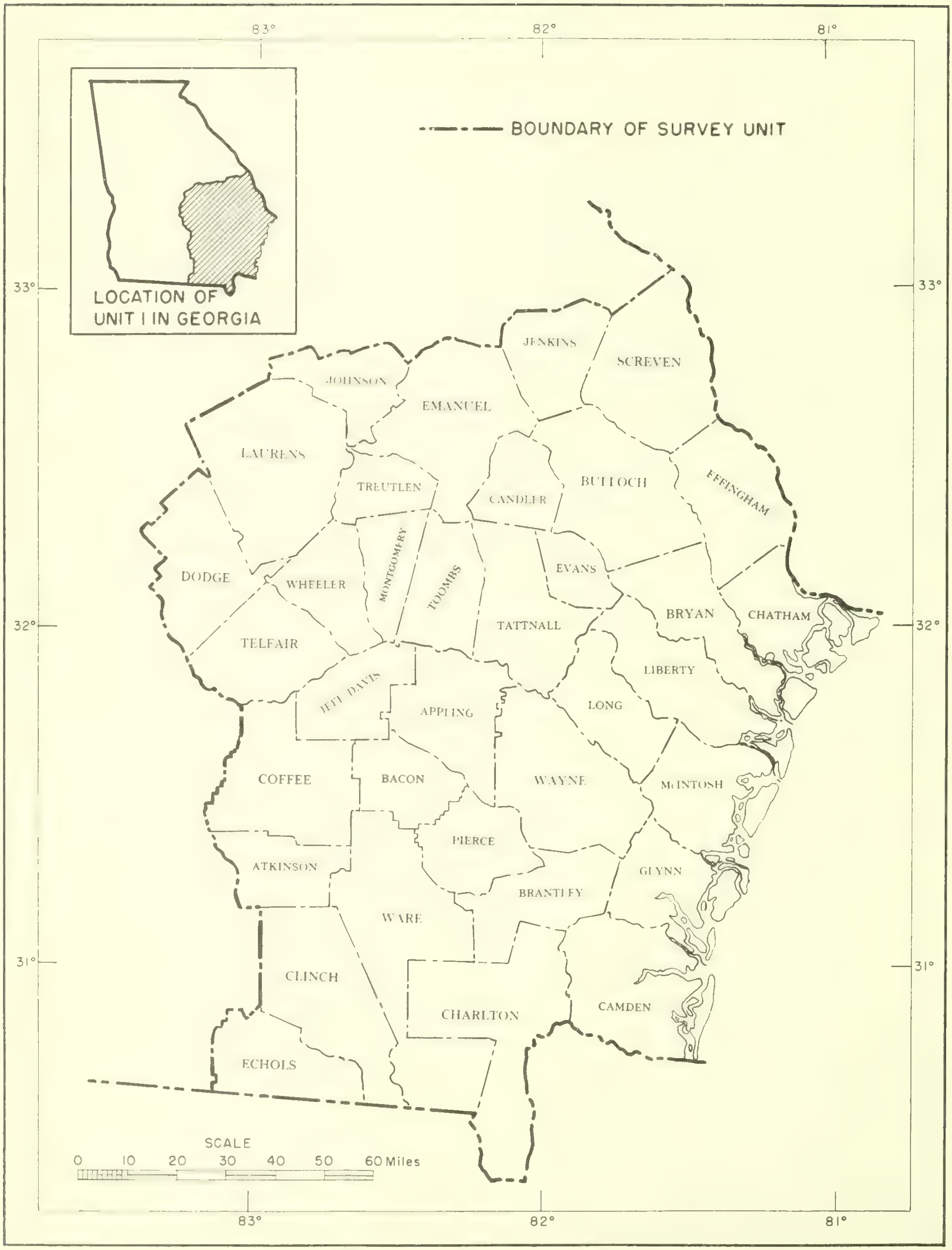

Figure 1.--Counties in Southeast Georgia included in Survey Unit No. 1

FOREST STATISTICS FOR SOUTHEAST GEORGIA, 1952

This progress report presents statistical data on forest area and timber volumes for 35 counties in Southeast Georgia designated as Survey Unit No. 1 (fig. 1). The field data were obtained during the period March 1951 to March 1952 as part of a resurvey of forest resources in Georgia which was started in July 1950 and is still continuing. The procedures used in obtaining the estimates of land area and timber volumes are outlined briefly on page 38.

The original Forest Survey of Southeast Georgia was made in 1934. Statistics for both surveys have been compared to show changes and trends which have occurred during the 17-year interim.

1952 HIGHLIGHTS AND SIGNIFICANT CHANGES

Nearly three-fourths of the land area is forested.--The thirty-five counties which make up the Southeast Georgia Survey Unit contain an aggregate area of 10.6 million acres. Forests occupy 7.7 million acres, or 72 percent, of this total land area (fig. 2). This unit, with its high proportion of forest land, is the most important timber-producing section in the State. Land in agricultural use amounts to 1.9 million acres, with 300 thousand additional acres classified as idle. The remaining 7 percent of land area includes cities and towns, rights-of-way, marsh, and coastal beaches.

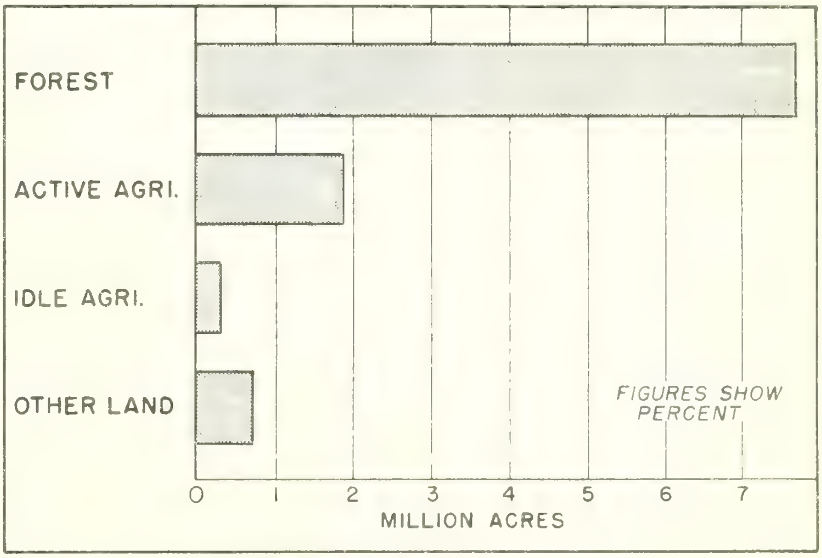

Figure 2.--Land use in Southeast Georgia, 1952

In the 17-year period between the 1934 and 1952 surveys, the area of forest land increased 234 thousand acres, or 3.1 percent. This increase is largely due to the reversion of idle and abandoned agricultural land to forest.

Ninety-two percent of the forest land is privately owned. Nearly half of the private forest land is in farm woodlands or forests, and the remainder is owned by pulp and paper mills, lumber companies, estates, and other private owners. The publicly-owned forest land is primarily in Federal ownership with the bulk of the acreage in Camp Stewart and the Okefenokee National Wildlife Refuge.

Hardwood forest types increase in area at expense of pine.--Acreage comparisons based on forest type definitions used in the original Survey show that 770 thousand acres or 10 percent of the forest land which was formerly classified as pine type has now been taken over by hardwoods. The heaviest loss was in the area of longleaf-slash pine types, which decreased nearly 600 thousand acres (fig. 3).

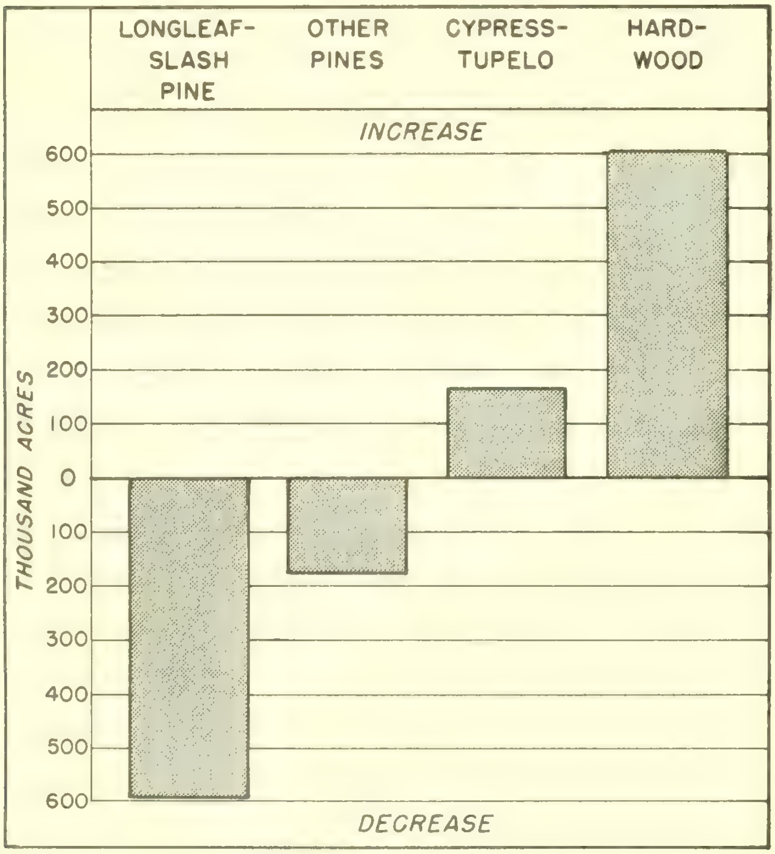

Figure 3.--Change in area of forest types, 1934-1952

These shifts in the composition of the forests are primarily the result of cutting practices used in harvesting timber. When stands of pine are mixed with hardwoods or cypress, or where there is a hardwood understory, the preferred pine timber is often cut leaving the less desirable species to occupy the site. Similar trends are found in other survey units in Southeastern States, and they may be expected to continue until hardwood control measures or changes in cutting practices can be economically applied on large areas.

Under current definitions which divide the forest into types on the basis of cubic volume or number of stems, pine types occupy 5.0 million acres, or 65 percent of the forest land. Hardwood types, including hardwood-pine mixtures, occupy 2.3 million acres, or 31 percent, and the cypress type occupies the remaining 4 percent.

Better stocking of young pine timber.--The numbers of sound trees found in both surveys have been compared by species group and size class to show the changes which have occurred in the timber stands. The most important change is the increase in number of sound pine trees in all diameters through the 14-inch class. Changes in numbers of trees for the cypress and hardwood species groups are spotty and indicate net reductions in trees of saw-timber size. These changes are shown in Table A.

Table A.--Percent change in numbers of sound trees by species group and diameter class, 1934 to 1952

D.b.h. class (inches)	Pine	Cypress	Soft-textured hardwoods	Hard-textured hardwoods	All species
2	+74	+20	+69	+101	+69
4	+96	-12	+17	+ 25	+51
6	+70	+ 9	- 3	+ 49	+40
8	+30	+16	- 8	+ 23	+19
10	+61	0	+16	- 21	+39
12	+42	+ 1	-10	- 11	+21
14	+11	- 2	+ 5	+ 18	+ 9
16	-11	-34	-19	+ 3	-14
18	-27	+ 2	-25	- 10	-22
20+	-51	-31	-51	- 15	-40
All diameters	+68	+10	+44	+ 69	+54
All trees 6" and larger	+46	+ 6	- 4	+ 19	+27
All saw-timber trees	+37	- 4	-13	- 3	+21

The increase in numbers of small pine trees, together with the decrease in area of pine types, indicates a better stocking of trees in present pine-timber stands. This is apparently the effect of more intensive fire protection, better management and cutting practices, more planting, and conservative turpentining practices in recent years.

The total increase in trees of all sizes and species amounts to 54 percent. Considering only the trees of volume size (6 inches and larger in diameter), the most significant increases were in pine and hard-textured hardwood species. In contrast, it should be noted that there were heavy decreases in the larger, better-quality trees primarily suitable for saw timber. The number of pine trees 15 inches or larger in diameter is 23 percent less. The numbers of cypress and hardwood trees of this size are also off about one-fourth. This reduction in the numbers of trees in larger, more desirable sizes means that the lumber industry must manufacture more of its product from smaller, lower-quality trees. It also means heavier competition between segments of the wood-using industries for trees in the same range of size classes.

Another change which deserves serious consideration is the increase in young sapling-size hardwood trees. There are now three hardwood saplings ranging in size from 1.0 to 2.9 inches in diameter for each two pine saplings of the same size, and the hardwoods are increasing at a faster rate. The proportion of cull trees in timber stands has also increased sharply since 1934.

Pine saw-timber volume increases 21 percent.--The volume of pine saw timber increased from 8.0 billion board feet in 1934 to 9.6 billion in 1952, a change of 21 percent. Hardwood and cypress timber exhibited a counter trend, decreasing in volume from 6.5 billion board feet to 5.1 billion. The resulting change is a 2-percent net increase in the total saw-timber volume as shown in table B.

Table B.--Change in volume of saw timber, 1934 to 1952

Species group	1934[1]	1952	Change
	Million bd. ft.	Million bd. ft.	Percent
Pines	7,994	9,641	+21
Hardwoods	5,132	3,953	-23
Cypress	1,364	1,171	-14
All species	14,490	14,765	+ 2

[1] Original survey volumes have been recomputed to allow for differences in standards between surveys and to adjust for the Okefenokee Swamp and coastal areas which were not surveyed in 1934. These changes in the 1934 estimates have been made to provide a uniform basis for comparison.

Softwoods make up 73 percent of the total board-foot volume, with pine timber accounting for nearly nine-tenths of the softwood volume. Slash pine is the most important species, followed in order by longleaf, loblolly, and pond pine. One-fourth of the saw-timber volume is in stands classified as large saw timber, and nearly 50 percent is in small saw-timber stands. Both classes have a minimum volume of 1,500 board feet per acre. Most of the remaining saw timber is scattered throughout stands of poles and young trees. The size of the average pine saw-timber tree is relatively small, being 11.9 inches in diameter at breast height.

Hardwood sawlog quality poor, softwood better.--Hardwood Log Grades for Standard Lumber, as developed by the Forest Products Laboratory, were used in grading hardwood sawlogs in the 1952 survey. Under these rules, only 14 percent of the board-foot volume qualified as select or grade 1, and 23 percent as grade 2. The remaining 63 percent was classified as grade 3, which is composed of low-grade factory lumber logs or logs suitable primarily for the manufacture of cross ties and timbers. This means that about three-fifths of the lumber produced from these logs would be in grades poorer than No. 1 common.

Softwood saw-timber trees graded under modified Crossett Log Grades are of somewhat better quality. Twenty-eight percent is in grade 1 logs, 46 percent is in grade 2, and only 26 percent is in grade 3. Sawn for lumber, these logs would yield approximately 15 percent of the total volume in B and Better grades.

Growing stock volume increases 8 percent.--The total growing stock volume includes all sound trees of pole-timber size (5.0 to 8.9 inches d.b.h. for softwoods and 5.0 to 10.9 inches for hardwoods) as well as the larger saw-timber trees. Trees smaller than 5.0 inches in size are considered saplings or seedlings and are not assigned volumes for inventory purposes.

Changes in terms of cubic volume for all sound trees 5.0 inches d.b.h. and larger roughly parallel those of board-foot volume. The total increase since 1934 was 8 percent, but pine volume increased 25 percent while hardwood and cypress volumes decreased 15 and 8 percent respectively.

Table C.--Change in volume of all trees 5.0 inches d.b.h. and larger, 1934 to 1952

Species group	Growing stock			Cull trees		
	1934[1]	1952	Change	1934[1]	1952	Change
	Million cu. ft.	Million cu. ft.	Percent	Million cu. ft.	Million cu. ft.	Percent
Pines	2,537	3,181	+25	20	159	+695
Hardwoods[2]	1,586	1,350	-15	458	817	+ 78
Cypress	381	351	- 8	93	78	- 16
All species	4,504	4,882	+ 8	571	1,054	+ 85

[1] See footnote 1, table B.

[2] Excludes limb volume of hardwood saw-timber trees.

Volume of cull material increases.--Table C also shows that the volume of trees classified as culls because of poor form or rotten defect has risen sharply. Although the volume of cull pine timber increased nearly seven times, the most significant increase was in cull hardwood trees. During the period, scrub oak volume increased from 22 million to 37 million cubic feet and the volume of rotten cull hardwoods doubled. Cull trees are seldom cut and tend to increase in number in the stands unless special silvicultural measures are taken to remove them. These trees pose a difficult utilization problem and at the same time occupy growing space which could be used to grow better-quality timber.

Planting required to reforest many areas.--Two and one-quarter million acres of forest land in the pine and upland hardwood types are now less than 40 percent stocked with sound trees of commercial species. About four-fifths of this acreage has a suitable source of seed and the areas may be expected to restock naturally. It will be necessary, however, to plan nearly one-half million acres to bring them back into production within a reasonable length of time. Also, some of the area reported as idle agricultural land is better suited to forest use and should be included in any planting program. About 200 thousand acres of the forest land is suitable for the operation of tractor-drawn planting machines and the remainder would require hand planting.

Other areas are overstocked.--More than 40 percent of the forest land area is in a fully-stocked or overstocked condition when all trees including the seedling and sapling sizes are considered. As these stands continue to grow, natural mortality may be expected to reduce the stocking on most areas. However, some stands will require a silvicultural treatment to prevent stagnation and provide for a reasonable rate of growth.

Gum naval stores activity widespread.--Throughout Southeast Georgia working turpentine crops are found on 36 percent of the area in slash and longleaf timber stands. More than 58 million trees, most of them in the ten-, twelve-, and fourteen-inch diameter classes, are now in the working and resting stages.

Since 1934, however, gum naval stores activity has declined. The area of working crops decreased from three million to 1.2 million acres, and the number of trees being worked is down to 38 million as compared to 51 million.

Table 1.--Gross area[1] by broad use class, 1952

Class of use	Area	
	Thousand acres	Percent
Forest land:		
Commercial	7,626.8	70.4
Noncommercial:		
Reserved from commercial use	0.6	([2])
Unproductive for timber use	49.8	0.5
Total forest	7,677.2	70.9
Nonforest land:		
Agriculture - active	1,691.6	15.6
Agriculture - idle	329.2	3.0
Pasture	191.0	1.8
Marsh	438.3	4.0
Urban and other[3]	272.0	2.5
Total nonforest	2,922.1	26.9
Total land area	10,599.3	97.8
Total water area[4]	233.3	2.2
All classes	10,832.6	100.0

1/ From U. S. Bureau of the Census, 1950.

2/ Less than 0.05 percent.

3/ Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

4/ Includes 81,000 acres of water according to Survey standards of area classification but defined by the Bureau of Census as land.

Table 2.--Ownership of land, 1952

Class of ownership	All land		Commercial forest land	
	Thousand acres	Percent	Thousand acres	Percent
Public land:				
National forest	--	--	--	--
Indian	-	--	--	--
Other federal	626.0	5.9	539.2	7.1
Total federal	626.0	5.9	539.2	7.1
State	55.2	0.5	46.6	0.6
County and municipal	21.7	0.2	8.6	0.1
Total public	702.9	6.6	594.4	7.8
Private land:				
Farm	(1/)	--	3,215.9	42.2
Other	(1/)	--	3,816.5	50.0
Total private	9,896.4	93.4	7,032.4	92.2
All classes	10,599.3	100.0	7,626.8	100.0

1/ Data not available.

Table 3.--Commercial forest area by forest type and stand-size class, 1952

(In thousand acres)

Forest type[1]	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	17.6	393.0	644.0	410.0	160.8	1,625.4
Slash pine	75.3	957.2	763.1	815.1	85.3	2,696.0
Loblolly pine	67.1	109.2	121.2	103.4	13.0	413.9
Shortleaf pine	--	--	3.3	--	--	3.3
Pond pine	13.8	28.3	55.3	112.3	38.1	247.8
Total	173.8	1,487.7	1,586.9	1,440.8	297.2	4,986.4
Other types:						
Oak-pine	63.8	95.9	109.3	160.2	37.7	466.9
Oak-hickory:						
Upland hdwds.	2.8	12.2	33.8	62.5	15.0	126.3
Scrub oak	--	-	-	35.9	198.6	234.5
Oak-gum-cypress:						
Lowland hdwds.	331.4	239.0	420.2	494.1	36.8	1,521.5
Cypress	32.4	76.4	70.2	104.2	8.0	291.2
Total	430.4	423.5	633.5	856.9	296.1	2,640.4
All types	604.2	1,911.2	2,220.4	2,297.7	593.3	7,626.8
Percent	7.9	25.1	29.1	30.1	7.8	100.0

1/ See description of forest types and stand-size classes in appendix.

Table 4.--Net volume[1] of saw timber by species and stand-size class, 1952

(In million board feet)

Species[2]	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	79.3	1,195.8	632.4	259.9	70.8	2,238.2
Slash pine	525.4	3,567.5	872.9	480.6	41.0	5,487.4
Loblolly pine	600.3	621.1	189.6	110.3	7.4	1,528.7
Pond pine	57.6	123.9	84.3	81.5	22.2	369.5
Shortleaf pine	--	5.4	5.4	6.3	--	17.1
Total pine	1,262.6	5,513.7	1,784.6	938.6	141.4	9,640.9
Cypress	455.9	478.5	143.5	84.9	2.7	1,165.5
Cedar	1.3	1.0	0.9	0.7	1.6	5.5
Total sftwds.	1,719.8	5,993.2	1,929.0	1,024.2	145.7	10,811.9
Hardwoods:						
Bl. & tupelo gum	438.9	567.0	187.7	99.8	1.5	1,294.9
Sweetgum	373.7	131.5	66.6	46.0	--	617.8
Yellow-poplar	100.4	69.5	23.1	3.2	--	196.2
Soft maple	45.6	58.8	44.6	3.8	--	152.8
Other soft hdwds.	157.5	69.6	30.5	20.6	--	278.2
Total	1,116.1	896.4	352.5	173.4	1.5	2,539.9
White & swamp chestnut oaks	30.4	17.2	8.7	2.4	--	58.7
Other white oaks	54.3	30.1	28.9	18.8	8.3	140.4
No. red & swamp red oaks	5.4	11.7	3.4	2.9	--	23.4
Other red oaks	507.3	179.4	118.1	51.9	--	856.7
Hickory	73.1	18.3	15.1	5.9	3.4	115.8
Ash	60.2	16.3	15.6	--	--	92.1
Other hard hdwds.	87.9	17.7	14.9	5.2	--	125.7
Total	818.6	290.7	204.7	87.1	11.7	1,412.8
Total hdwds.	1,934.7	1,187.1	557.2	260.5	13.2	3,952.7
All species	3,654.5	7,180.3	2,486.2	1,284.7	158.9	14,764.6
Percent	24.8	48.6	16.8	8.7	1.1	100.0

[1] Log scale, International 1/4-inch rule.

[2] See appendix for species combined with others.

Table 5.--Net volume[1] of saw timber by species and diameter class, 1952

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent
Softwoods:						
Longleaf pine	1,662.4	558.1	17.7	--	2,238.2	15.2
Slash pine	3,594.0	1,727.2	156.1	10.1	5,487.4	37.2
Loblolly pine	513.5	743.5	238.0	33.7	1,528.7	10.3
Pond pine	173.2	177.4	18.9	--	369.5	2.5
Shortleaf pine	7.7	9.4	--	--	17.1	0.1
Total pine	5,950.8	3,215.6	430.7	43.8	9,640.9	65.3
Cypress	504.2	395.2	211.3	54.8	1,165.5	7.9
Cedar	4.4	1.1	--	--	5.5	([3])
Total sftwds.	6,459.4	3,611.9	642.0	98.6	10,811.9	73.2
Hardwoods:						
Bl. & tupelo gum	384.4	734.5	149.0	27.0	1,294.9	8.8
Sweetgum	86.1	341.4	148.1	42.2	617.8	4.2
Yellow-poplar	25.4	127.4	43.4	--	196.2	1.3
Soft maple	47.1	93.9	11.8	--	152.8	1.0
Other soft hdwds.	66.0	173.3	38.9	--	278.2	1.9
Total	609.0	1,470.5	391.2	69.2	2,539.9	17.2
White & swamp chestnut oak	8.5	35.4	14.8	--	58.7	0.4
Other white oaks	18.0	51.7	35.7	35.0	140.4	1.0
No. red & swamp red oaks	4.5	14.5	4.4	--	23.4	0.2
Other red oaks	115.8	355.4	238.3	147.2	856.7	5.8
Hickory	14.0	54.4	15.9	31.5	115.8	0.8
Ash	8.8	78.9	4.4	--	92.1	0.6
Other hard hdwds.	13.8	47.6	23.8	40.5	125.7	0.8
Total	183.4	637.9	337.3	254.2	1,412.8	9.6
Total hdwds.	792.4	2,108.4	728.5	323.4	3,952.7	26.8
All species	7,251.8	5,720.3	1,370.5	422.0	14,764.6	100.0
Percent	49.1	38.7	9.3	2.9	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included.

[3] Less than 0.05 percent.

Table 6.--Net volume[1] of saw timber by forest type and stand-size class, 1952

(In million board feet)

Forest type[2]	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	55.6	1,115.7	571.6	161.3	55.1	1,959.3
Slash pine	476.5	3,828.9	833.6	422.2	37.3	5,598.5
Loblolly pine	472.0	526.2	107.3	45.2	5.8	1,156.5
Shortleaf pine	--	--	7.3	--	--	7.3
Pond pine	42.5	69.6	80.4	33.1	18.9	244.5
Total	1,046.6	5,540.4	1,600.2	661.8	117.1	8,966.1
Other types:						
Oak-pine	321.1	349.9	154.7	115.3	10.7	951.7
Oak-hickory:						
Upland hdwds.	8.1	47.7	27.4	33.5	3.0	119.7
Scrub oak	--	--	--	5.6	19.4	25.0
Oak-gum-cypress:						
Lowland hdwds.	2,001.5	950.7	598.4	418.3	6.5	3,975.4
Cypress	277.2	291.6	105.5	50.2	2.2	726.7
Total	2,607.9	1,639.9	886.0	622.9	41.8	5,798.5
All types	3,654.5	7,180.3	2,486.2	1,284.7	158.9	14,764.6
Percent	24.8	48.6	16.8	8.7	1.1	100.0

[1] Log scale, International 1/4-inch log rule.

[2] See description of forest types and stand-size classes in appendix.

Table 7.--Net volume[1] of all timber by species and stand-size class, 1952

(In thousand cords)

GROWING STOCK

Species	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	240	4,789	3,931	1,289	315	10,564
Slash pine	1,725	15,395	7,153	2,075	137	26,485
Loblolly pine	1,550	2,066	1,268	447	20	5,351
Pond pine	153	487	463	364	71	1,538
Shortleaf pine	--	15	15	16	--	46
Total pine	3,668	22,752	12,830	4,191	543	43,984
Cypress	1,115	1,878	818	431	8	4,250
Cedar	4	3	3	2	5	17
Total sftwds.	4,787	24,633	13,651	4,624	556	48,251
Hardwoods:						
Bl. & tupelo gum	1,699	3,432	2,132	562	11	7,836
Sweetgum	1,131	531	602	145	--	2,409
Yellow-poplar	298	239	91	61	--	689
Soft maple	273	319	352	77	--	1,021
Other soft hdwds.	538	379	217	60	--	1,194
Total	3,939	4,900	3,394	905	11	13,149
White & swamp chestnut oak	75	49	36	34	--	194
Other white oaks	138	116	123	66	21	464
No. red & swamp red oaks	13	37	31	10	--	91
Other red oaks	1,434	665	864	198	4	3,165
Hickory	210	79	55	14	8	366
Ash	180	113	119	--	--	412
Dogwood, persimmon	61	5	20	5	4	95
Other hard hdwds.	250	122	72	22	--	466
Total	2,361	1,186	1,320	349	37	5,253
Total hdwds.	6,300	6,086	4,714	1,254	48	18,402
All species	11,087	30,719	18,365	5,878	604	66,653
Percent	16.6	46.1	27.6	8.8	0.9	100.0

OTHER MATERIAL

Sound culls						
Softwoods	126	714	663	545	163	2,211
Hardwoods[2]	1,566	1,671	1,723	1,149	566	6,675
Rotten culls	1,418	1,243	1,453	887	117	5,118
Hardwood limbs	1,376	945	614	310	35	3,280
Total other material	4,486	4,573	4,453	2,891	881	17,284

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 8.--Net volume[1] of all timber by species and diameter class, 1952

(In thousand cords)

GROWING STOCK

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	1,220	2,436	2,836	2,387	1,636	49	10,564
Slash pine	3,434	5,641	6,276	5,579	5,136	419	26,485
Loblolly pine	491	876	665	850	1,863	606	5,351
Pond pine	205	279	272	266	471	45	1,538
Shortleaf pine	--	--	16	8	22	--	46
Total pine	5,350	9,232	10,065	9,090	9,128	1,119	43,984
Cypress	401	783	731	776	989	570	4,250
Cedar	--	--	7	7	3	--	17
Total sftwds.	5,751	10,015	10,803	9,873	10,120	1,689	48,251
Hardwoods:							
Bl. & tupelo gum	986	1,362	1,875	1,175	2,000	438	7,836
Sweetgum	190	280	377	238	874	450	2,409
Yellow-poplar	46	74	70	67	327	105	689
Soft maple	159	221	210	147	255	29	1,021
Other soft hdwds.	136	191	151	180	442	94	1,194
Total	1,517	2,128	2,683	1,807	3,898	1,116	13,149
White & swamp chestnut oak	13	15	17	26	89	34	194
Other white oaks	63	44	14	51	129	163	464
No. red & swamp red oaks	7	2	24	12	36	10	91
Other red oaks	325	387	325	325	905	898	3,165
Hickory	7	50	19	40	139	111	366
Ash	60	53	60	25	203	11	412
Dogwood, persimmon	52	30	--	5	8	--	95
Other hard hdwds.	36	68	58	34	119	151	466
Total	563	649	517	518	1,628	1,378	5,253
Total hdwds.	2,080	2,777	3,200	2,325	5,526	2,494	18,402
All species	7,831	12,792	14,003	12,198	15,646	4,183	66,653
Percent	11.7	19.2	21.0	18.3	23.5	6.3	100.0

OTHER MATERIAL

Species	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	All diameters
Sound culls							
Softwoods	131	229	573	492	695	91	2,211
Hardwoods[2]	925	1,272	1,326	924	1,628	600	6,675
Rotten culls	374	528	566	482	1,511	1,657	5,118
Hardwood limbs	--	--	--	665	1,714	901	3,280
Total other material	1,430	2,029	2,465	2,563	5,548	3,249	17,284

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 9.--Net volume[1] of all timber by species and class of material, 1952

(In thousand cords)

Species	GROWING STOCK				OTHER MATERIAL	
	Saw-timber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	5,579	1,329	3,656	10,564	623	22
Slash pine	14,048	3,362	9,075	26,485	751	72
Loblolly pine	3,213	771	1,367	5,351	324	38
Pond pine	856	198	484	1,538	207	66
Shortleaf pine	37	9	--	46	20	--
Total pine	23,733	5,669	14,582	43,984	1,925	198
Cypress	2,403	663	1,184	4,250	269	602
Cedar	12	5	--	17	17	3
Total sftwds.	26,148	6,337	15,766	48,251	2,211	803
Hardwoods:						
Bl. & tupelo gum	2,887	726	4,223	7,836	3,150	1,974
Sweetgum	1,238	324	847	2,409	573	436
Yellow-poplar	398	101	190	689	134	66
Soft maple	345	86	590	1,021	978	512
Other soft hdwds.	576	140	478	1,194	719	409
Total	5,444	1,377	6,328	13,149	5,554	3,397
White & swamp chestnut oak	116	33	45	194	44	24
Other white oaks	274	69	121	464	549	146
No. red & swamp red oaks	46	12	33	91	43	4
Other red oaks	1,687	441	1,037	3,165	1,579	1,049
Hickory	226	64	76	366	214	39
Ash	185	54	173	412	160	134
Dogwood, persimmon	11	2	82	95	14	13
Scrub oak[3]	--	--	--	--	1,021	--
Other hard hdwds.	238	66	162	466	198	88
Total	2,783	741	1,729	5,253	3,822	1,497
Total hdwds.	8,227	2,118	8,057	18,402	9,376	4,894
All species	34,375	8,455	23,823	66,653	11,587	5,697
Percent	51.6	12.7	35.7	100.0	67.0	33.0

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[1] Sound wood and bark.

[2] Includes limb volume of hardwood saw-timber trees.

[3] Includes noncommercial species.

Table 10.--Net volume[1] of all timber by forest type and stand-size class, 1952

(In thousand cords)

GROWING STOCK

Forest type	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	161	4,521	3,851	852	223	9,608
Slash pine	1,618	17,111	7,079	1,984	119	27,911
Loblolly pine	1,315	1,889	1,047	177	15	4,443
Shortleaf pine	--	--	20	--	--	20
Pond pine	115	214	407	209	61	1,006
Total	3,209	23,735	12,404	3,222	418	42,988
Other types:						
Oak-pine	1,068	1,501	899	504	37	4,009
Oak-hickory:						
Upland hdwds.	28	164	240	130	17	579
Scrub oak	--	--	--	23	95	118
Oak-gum-cypress:						
Lowland hdwds.	6,132	4,089	4,089	1,792	31	16,133
Cypress	650	1,230	733	207	6	2,826
Total	7,878	6,984	5,961	2,656	186	23,665
All types	11,087	30,719	18,365	5,878	604	66,653
Percent	16.6	46.1	27.6	8.8	0.9	100.0
OTHER MATERIAL						
Pine types:						
Longleaf pine	4	188	304	209	57	762
Slash pine	149	1,253	471	383	27	2,283
Loblolly pine	269	192	162	187	62	872
Shortleaf pine	--	--	11	--	--	11
Pond pine	13	33	30	76	27	179
Total	435	1,666	978	855	173	4,107
Other types:						
Oak-pine	343	551	417	139	82	1,532
Oak-hickory:						
Upland hdwds.	34	74	85	95	63	351
Scrub oak	--	--	--	58	342	400
Oak-gum-cypress:						
Lowland hdwds.	3,570	2,092	2,771	1,610	208	10,251
Cypress	104	190	202	134	13	643
Total	4,051	2,907	3,475	2,036	708	13,177
All types	4,486	4,573	4,453	2,891	881	17,284
Percent	25.9	26.5	25.8	16.7	5.1	100.0

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[1] Sound wood and bark.

Table 11.--Net volume[1] of pole-timber trees by forest type and stand-size class, 1952

(In thousand cords)

GROWING STOCK

Forest type	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	--	1,087	2,080	350	45	3,562
Slash pine	224	4,910	4,445	666	4	10,249
Loblolly pine	149	444	742	53	--	1,388
Shortleaf pine	--	--	--	--	--	--
Pond pine	9	9	176	103	5	302
Total	382	6,450	7,443	1,172	54	15,501
Other types:						
Oak-pine	243	520	458	182	7	1,410
Oak-hickory:						
Upland hdwds.	8	38	168	37	8	259
Scrub oak	--	--	--	7	37	44
Oak-gum-cypress:						
Lowland hdwds.	1,086	1,503	2,477	644	13	5,723
Cypress	18	396	415	57	--	886
Total	1,355	2,457	3,518	927	65	8,322
All types	1,737	8,907	10,961	2,099	119	23,823
Percent	7.3	37.4	46.0	8.8	0.5	100.0

OTHER MATERIAL

Forest type	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	--	42	71	72	24	209
Slash pine	75	423	171	141	--	810
Loblolly pine	75	42	46	36	--	199
Shortleaf pine	--	--	--	--	--	--
Pond pine	10	10	20	35	--	75
Total	160	517	308	284	24	1,293
Other types:						
Oak-pine	77	178	168	42	56	521
Oak-hickory:						
Upland hdwds.	6	10	33	16	31	96
Scrub oak	--	--	--	27	241	268
Oak-gum-cypress:						
Lowland hdwds.	702	500	933	582	102	2,819
Cypress	40	50	166	41	--	297
Total	825	738	1,300	708	430	4,001
All types	985	1,255	1,608	992	454	5,294
Percent	18.6	23.7	30.4	18.7	8.6	100.0

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[1] Sound wood and bark.

Table 12.--Net volume[1] of all timber by species and diameter class, 1952

(In million cubic feet)

GROWING STOCK

Species	Pole trees		Saw-timber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	71.6	163.9	206.8	181.6	129.8	4.1	757.8
Slash pine	202.8	377.8	456.2	421.1	409.6	35.7	1,903.2
Loblolly pine	28.8	58.9	48.7	64.7	150.4	51.8	403.3
Pond pine	12.1	18.8	19.3	20.5	38.0	3.9	112.6
Shortleaf pine	--	--	1.1	0.6	1.9	--	3.6
Total pine	315.3	619.4	732.1	688.5	729.7	95.5	3,180.5
Cypress	26.9	59.0	57.9	65.3	87.0	53.8	349.9
Cedar	--	--	0.5	0.5	0.3	--	1.3
Total sftwds.	342.2	678.4	790.5	754.3	817.0	149.3	3,531.7
Hardwoods:							
Bl. & tupelo gum	59.4	89.6	131.0	88.7	158.4	36.2	563.3
Sweetgum	11.4	18.4	26.1	17.8	69.3	37.0	180.0
Yellow-poplar	2.9	4.8	4.9	5.2	25.9	8.5	52.2
Soft maple	9.4	14.5	14.8	11.0	20.0	2.4	72.1
Other soft hdwds.	8.3	12.6	10.5	13.7	35.3	7.6	88.0
Total	91.4	139.9	187.3	136.4	308.9	91.7	955.6
White & swamp chestnut oak	0.8	0.9	1.2	1.8	7.2	2.9	14.8
Other white oaks	3.7	2.9	1.0	3.9	10.5	13.5	35.5
No. red & swamp red oaks	0.4	0.1	1.7	1.0	2.8	0.8	6.8
Other red oaks	19.4	25.5	22.4	24.8	72.1	74.0	238.2
Hickory	0.4	3.4	1.3	3.0	11.0	9.1	28.2
Ash	3.5	3.6	4.2	1.8	16.1	0.8	30.0
Dogwood, persimmon	3.1	2.0	--	0.4	0.6	--	6.1
Other hard hdwds.	2.1	4.6	4.0	2.5	9.1	12.4	34.7
Total	33.4	43.0	35.8	39.2	129.4	113.5	394.3
Total hdwds.	124.8	182.9	223.1	175.6	438.3	205.2	1,349.9
All species	467.0	861.3	1,013.6	929.9	1,255.3	354.5	4,881.6
Percent	9.6	17.6	20.8	19.0	25.7	7.3	100.0

OTHER MATERIAL

Species	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	All diameters
Sound culls							
Softwoods	8.1	16.1	41.1	38.4	56.0	7.7	167.4
Hardwoods[2]	58.9	84.8	92.5	70.9	129.9	49.2	486.2
Rotten culls	22.9	35.2	40.1	39.1	122.9	140.4	400.6
Hardwood limbs	--	--	--	41.6	107.5	64.3	213.4
Total other material	89.9	136.1	173.7	190.0	416.3	261.6	1,267.6

[1] Excluding bark.

[2] Includes noncommercial species.

Table 13.--Net volume[1] of all timber by species and class of material, 1952

(In million cubic feet)

Species	GROWING STOCK				OTHER MATERIAL	
	Saw-timber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	425.3	97.0	235.5	757.8	47.5	1.7
Slash pine	1,077.6	245.0	580.6	1,903.2	56.0	4.9
Loblolly pine	253.7	61.9	87.7	403.3	24.6	2.9
Pond pine	67.1	14.6	30.9	112.6	15.3	5.1
Shortleaf pine	2.9	0.7	--	3.6	1.5	--
Total pine	1,826.6	419.2	934.7	3,180.5	144.9	14.6
Cypress	214.1	49.9	85.9	349.9	21.2	55.1
Cedar	1.1	0.2	--	1.3	1.3	0.3
Total sftwds.	2,041.8	469.3	1,020.6	3,531.7	167.4	70.0
Hardwoods:						
Bl. & tupelo gum	229.9	53.4	280.0	563.3	228.2	149.8
Sweetgum	99.6	24.5	55.9	180.0	30.2	31.6
Yellow-poplar	31.8	7.8	12.6	52.2	6.0	5.1
Soft maple	27.2	6.2	38.7	72.1	67.4	37.0
Other soft hdwds.	45.6	11.0	31.4	88.0	46.3	29.8
Total	434.1	102.9	418.6	955.6	378.1	253.3
White & swamp chestnut oak	9.5	2.4	2.9	14.8	3.4	1.7
Other white oaks	22.1	5.8	7.6	35.5	41.3	11.3
No. red & swamp red oaks	3.7	0.9	2.2	6.8	3.3	0.4
Other red oaks	136.2	34.7	67.3	238.2	122.1	84.1
Hickory	18.4	4.7	5.1	28.2	15.8	2.9
Ash	15.0	3.7	11.3	30.0	8.9	9.6
Dogwood, persimmon	0.8	0.2	5.1	6.1	1.0	0.9
Scrub oak[3]	--	--	--	--	74.1	--
Other hard hdwds.	19.2	4.8	10.7	34.7	11.3	6.7
Total	224.9	57.2	112.2	394.3	281.2	117.6
Total hdwds.	659.0	160.1	530.8	1,349.9	659.3	370.9
All species	2,700.8	629.4	1,551.4	4,881.6	826.7	440.9
Percent	55.3	12.9	31.8	100.0	65.2	34.8

[1] Excluding bark.

[2] Includes limb volume of hardwood saw-timber trees.

[3] Includes noncommercial species.

Table 14.--Average volume[1] per acre of saw timber by forest type, species group, and stand-size class, 1952

(In board feet)

Forest type and species group	Large saw-timber stands	Small saw-timber stands	Pole-timber stands	Other stand sizes	All stands
Longleaf pine					
Softwood	3,155	2,809	887	376	1,197
Hardwood	--	30	1	3	9
Slash pine					
Softwood	5,867	3,905	1,062	494	2,016
Hardwood	463	96	31	17	61
Loblolly pine[2]					
Softwood	6,377	4,496	854	376	2,563
Hardwood	655	322	67	63	227
Pond pine					
Softwood	2,838	2,319	1,453	340	954
Hardwood	244	142	--	6	33
Oak-pine					
Softwood	3,516	2,016	1,013	567	1,372
Hardwood	1,519	1,633	402	70	666
Upland hdwds.					
Softwood	--	412	212	201	220
Hardwood	2,891	3,514	599	269	728
Scrub oak					
Softwood	--	--	--	67	67
Hardwood	--	--	--	40	40
Lowland hdwds.					
Softwood	780	524	333	415	489
Hardwood	5,259	3,454	1,091	385	2,124
Cypress					
Softwood	8,428	3,554	1,470	466	2,403
Hardwood	138	261	34	--	92
All types					
Softwood	2,846	3,136	869	405	1,418
Hardwood	3,202	621	251	95	518

[1] Log scale, International 1/4-inch rule.

[2] Includes shortleaf pine type.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand-size class, 1952

(In standard cords)

Forest type and species group	Large saw-timber stands		Small saw-timber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[2]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	9.1	0.2	11.4	0.4	6.0	0.4	1.9	0.3	5.9	0.3
Hardwood	--	--	0.1	0.1	(3/)	0.1	(3/)	0.2	(3/)	0.1
Slash pine										
Softwood	19.7	0.4	16.9	0.5	9.0	0.4	2.2	0.3	9.8	0.4
Hardwood	1.8	1.6	1.0	0.8	0.3	0.2	0.1	0.2	0.5	0.4
Loblolly pine										
Softwood	16.6	1.1	15.0	0.5	7.6	0.6	1.5	0.9	9.3	0.7
Hardwood	2.9	2.9	2.3	1.2	1.0	0.7	0.2	1.3	1.4	1.4
Shortleaf pine										
Softwood	--	--	--	--	6.1	3.4	--	--	6.1	3.4
Hardwood	--	--	--	--	--	--	--	--	--	--
Pond pine										
Softwood	7.5	--	7.0	1.0	7.2	0.5	1.7	0.4	3.9	0.5
Hardwood	0.9	0.9	0.5	0.2	0.1	(3/)	0.1	0.2	0.2	0.2
Oak-pine										
Softwood	10.0	0.1	6.8	0.3	4.0	0.1	2.3	0.3	4.7	0.2
Hardwood	6.8	5.3	8.8	5.4	4.2	3.7	0.4	0.9	3.9	3.1
Upland hardwoods										
Softwood	--	--	1.2	--	1.2	0.1	0.7	0.1	0.8	0.1
Hardwood	9.9	12.1	12.3	6.1	6.0	2.4	1.2	1.9	3.8	2.7
Scrub oak										
Softwood	--	--	--	--	--	--	0.4	0.1	0.4	0.1
Hardwood	--	--	--	--	--	--	0.1	1.6	0.1	1.6
Lowland hardwoods										
Softwood	2.0	0.3	1.6	0.3	1.2	0.1	1.7	0.4	1.6	0.3
Hardwood	16.5	10.5	15.5	8.4	8.5	6.5	1.7	3.0	9.0	6.4
Cypress										
Softwood	19.6	1.7	14.3	1.4	8.7	0.5	1.9	1.1	8.7	1.1
Hardwood	0.5	1.5	1.8	1.1	1.8	2.4	(3/)	0.2	1.0	1.1
All types										
Softwood	7.9	0.5	12.9	0.5	6.1	0.4	1.8	0.3	6.3	0.4
Hardwood	10.4	7.0	3.2	1.9	2.1	1.6	0.5	1.0	2.4	1.9

1/ Sound wood and bark.

2/ Sound trees; cull trees.

3/ Less than 0.05 cords per acre.

Table 16.--Number[1] of turpentine pine trees by working status and tree size, 1952

(In thousands of trees)

Working status	Pole-size trees	Small saw-timber trees	Large saw-timber trees	All trees
Round timber	223,659	59,783	1,803	285,245
Working timber				
Front-faced	1,230	18,442	245	19,917
Back-faced	506	15,601	1,903	18,010
Resting timber	1,305	17,274	1,745	20,324
Worked-out timber	518	9,379	1,065	10,962
All classes	227,218	120,479	6,761	354,458

[1] Includes sound cull trees.

Table 17.--Area[1] of turpentine pine types by working status, 1952

Crop working status	Area	
	Thousand acres	Percent
Round timber	885.1	19.3
Working timber		
Front-faced	587.9	12.8
Back-faced	635.7	13.9
Resting timber	426.8	9.3
Worked-out timber	138.5	3.0
No status[2]	1,913.4	41.7
All classes	4,587.4	100.0

[1] Includes 266 thousand acres of hardwood-longleaf pine and hardwood-slash pine mixtures.

[2] Areas having less than 15 longleaf or slash pine trees 9.0 inches d.b.h. or larger per acre.

Table 18.--Area of stump land and tonnage of wood naval stores stumps by availability class, 1952

Availability class	Area	No. stumps	Tonnage[1]
	Thousand acres	Thousand stumps	Thousand tons
Merchantable area	3,879.1	62,581	9,763
Marginal area[2]	89.6	977	152
Potential area[3]	1,248.1	22,926	3,576
Inaccessible area	283.7	5,032	785
All classes	5,500.5	91,516	14,276

[1] Includes 207 thousand tons of stumps on agricultural land.

[2] Stump-land areas less than 25 acres in extent and partially worked areas.

[3] Areas unworkable at present due to density of timber stands.

Table 19.--Number of trees[1] by species group, quality class, and tree size, 1952

(In thousands of trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small saw-timber trees	Large saw-timber trees	All trees
Yellow pines:					
Sound trees	852,751	255,046	128,540	9,899	1,246,236
Sound culls	27,951	6,224	8,578	890	43,643
Rotten culls	4,683	2,138	505	156	7,482
Total	885,385	263,408	137,623	10,945	1,297,361
Other softwoods:					
Sound trees	131,569	26,982	12,551	1,760	172,862
Sound culls	5,142	2,798	1,094	46	9,080
Rotten culls	1,713	1,220	1,015	746	4,694
Total	138,424	31,000	14,660	2,552	186,636
Soft-textured hdwds.:					
Sound trees	773,872	104,014	18,754	6,838	903,478
Sound culls	176,548	41,720	6,855	1,796	226,919
Rotten culls	43,308	30,396	5,642	3,855	83,201
Total	993,728	176,130	31,251	12,489	1,213,598
Hard-textured hdwds.:					
Sound trees	231,688	31,535	5,523	4,034	272,780
Sound culls[2]	359,559	42,409	3,907	1,761	407,636
Rotten culls	25,039	7,625	2,234	2,184	37,082
Total	616,286	81,569	11,664	7,979	717,498
All species	2,633,823	552,107	195,198	33,965	3,415,093

[1] All trees 1.0 inch d.b.h. and larger.

[2] Includes scrub oak and noncommercial trees.

Table 20.--Area[1] of seedling, sapling, and poorly stocked stands by plantability class, 1952

Forest type	No planting required[2]	Suitable for machine planting	Hand planting required	All classes
	Thousand acres	Thousand acres	Thousand acres	Thousand acres
Longleaf pine	462.8	60.2	47.8	570.8
Slash pine	803.0	51.5	45.9	900.4
Loblolly pine	106.4	0.6	9.4	116.4
Pond pine	134.3	11.0	5.1	150.4
Oak-pine	167.8	7.4	22.7	197.9
Upland hdwds.	65.8	0.9	10.8	77.5
Scrub oak	31.5	66.6	136.4	234.5
All types	1,771.6	198.2	278.1	2,247.9
Percent	78.8	8.8	12.4	100.0

[1] Acreage of oak-gum-cypress types excluded.

[2] Sufficient seed trees present or area is restocking naturally.

Table 21.--Stocking on commercial forest area by forest type and tree size class, 1952

GROWING STOCK OF ALL SIZES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-99%	Over-stocked 100+%	Total area
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres
Longleaf pine	126.8	715.2	446.7	179.9	156.8	1,625.4
Slash pine	60.6	522.5	483.3	342.4	1,287.2	2,696.0
Loblolly pine	11.0	47.6	73.2	54.4	227.7	413.9
Shortleaf pine	--	--	3.3	--	--	3.3
Pond pine	24.5	81.3	67.4	25.4	49.2	247.8
Oak-pine	32.6	58.9	57.8	26.1	291.5	466.9
Upland hdwds.	12.0	18.5	9.9	14.0	71.9	126.3
Scrub oak	198.7	25.2	7.4	3.2	--	234.5
Lowland hdwds.	34.1	141.8	184.3	201.1	960.2	1,521.5
Cypress	4.0	40.9	25.8	18.1	202.4	291.2
All types	504.3	1,651.9	1,359.1	864.6	3,246.9	7,626.8
Percent	6.6	21.7	17.8	11.3	42.6	100.0

GROWING STOCK 5.0 INCHES DBH AND LARGER

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-99%	Over-stocked 100+%	Total area
Longleaf pine	485.9	807.1	260.8	67.6	4.0	1,625.4
Slash pine	692.9	1,081.2	533.1	239.0	149.8	2,696.0
Loblolly pine	89.1	197.5	66.8	38.5	22.0	413.9
Shortleaf pine	--	3.3	--	--	--	3.3
Pond pine	136.0	98.8	13.0	--	--	247.8
Oak-pine	153.7	197.4	67.3	38.9	9.6	466.9
Upland hdwds.	69.5	35.8	21.0	--	--	126.3
Scrub oak	234.5	--	--	--	--	234.5
Lowland hdwds.	374.8	535.5	367.4	142.1	101.7	1,521.5
Cypress	83.0	102.7	44.7	27.3	33.5	291.2
All types	2,319.4	3,059.3	1,374.1	553.4	320.6	7,626.8
Percent	30.4	40.1	18.0	7.3	4.2	100.0

SAW-TIMBER GROWING STOCK

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-99%	Over-stocked 100+%	Total area
Longleaf pine	797.2	716.2	98.3	13.7	--	1,625.4
Slash pine	1,209.8	1,037.7	327.3	97.2	24.0	2,696.0
Loblolly pine	180.2	152.6	58.5	13.4	9.2	413.9
Shortleaf pine	3.3	--	--	--	--	3.3
Pond pine	165.2	80.5	2.1	--	--	247.8
Oak-pine	235.2	179.3	43.5	8.9	--	466.9
Upland hdwds.	91.4	28.1	6.8	--	--	126.3
Scrub oak	234.5	--	--	--	--	234.5
Lowland hdwds.	603.3	652.3	190.5	44.4	31.0	1,521.5
Cypress	109.2	124.3	40.9	10.0	6.8	291.2
All types	3,629.3	2,971.0	767.9	187.6	71.0	7,626.8
Percent	47.6	38.9	10.1	2.5	0.9	100.0

Table 22.--County area by broad use class, 1952

County	Total area[1]	Non-forest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Appling	329.6	75.2	1.0	--	253.4	77.1
Atkinson	203.5	35.[illegible]	0.8	--	167.6	82.7
Bacon	187.5	57.0	-	--	130.5	69.6
Brantley	286.1	24.1	-	-	262.0	91.6
Bryan	291.2	43.4	11.6	35.2	201.0	71.9
Bulloch	438.4	198.2	2.4	--	237.8	54.5
Camden	444.8	103.6	31.7	--	309.5	74.9
Candler	160.6	61.5	0.6	--	98.5	61.6
Charlton	511.4	35.4	6.9	4.0	465.1	92.2
Chatham	321.3	148.3	46.9	0.4	125.7	45.8
Clinch	510.1	20.3	0.7	-	489.1	96.0
Coffee	392.3	142.2	0.4	--	249.7	63.7
Dodge	320.0	140.3	4.4	--	175.3	55.5
Echols	272.0	17.0	0.3		254.7	93.7
Effingham	307.2	53.2	1.2	--	252.8	82.6
Emanuel	439.1	154.9	0.9		283.3	64.7
Evans	119.0	41.4	0.5		77.1	65.1
Glynn	297.6	88.5	35.6	0.1	173.4	66.2
Jeff Davis	211.8	40.0	1.1		170.7	81.0
Jenkins	224.6	122.5	0.4	0.1	101.6	45.3
Johnson	200.3	101.3	0.8		98.2	49.2
Laurens	519.1	243.9	1.6		273.6	52.9
Liberty	343.0	70.5	25.1	--	247.4	77.8
Long	257.9	15.4	1.3	2.9	238.3	92.9
McIntosh	306.6	90.6	41.8	2.6	171.6	64.8
Montgomery	151.7	54.3	2.3	-	95.1	63.7
Pierce	218.9	59.8	0.9	--	158.2	72.6
Screven	416.6	177.6	2.9	-	236.1	57.1
Tattnall	315.5	93.1	1.3	-	221.1	70.4
Telfair	281.6	91.2	0.3	-	190.1	67.6
Toombs	236.2	91.0	1.2	-	144.0	61.3
Treutlen	124.2	43.2	0.2	--	80.8	65.2
Ware	583.7	73.5	5.3	5.1	499.8	86.4
Wayne	413.4	50.6	2.0	--	360.8	87.7
Wheeler	195.8	63.1	1.9	--	130.8	67.5
Unit total	10,832.6	[illegible]	[illegible]	50.4	7,626.8	72.0

[1] Gross area from Bureau of the Census, 1950.

Table 23.--Ownership of commercial forest land by county, 1952

County	Private		Public					
			National forest	Other federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Appling	252.4	99.6	--	--	0.9	0.1	1.0	0.4
Atkinson	167.6	100.0	--	--	--	--	--	--
Bacon	130.5	100.0	--	--	--	--	--	--
Brantley	257.0	98.1	--	--	5.0	--	5.0	1.9
Bryan	129.0	64.2	--	72.0	(1/)	--	72.0	35.8
Bulloch	237.4	99.8	--	--	0.1	0.3	0.4	0.2
Camden	309.0	99.8	--	--	0.5	--	0.5	0.2
Candler	98.5	100.0	--	--	--	(1/)	(1/)	--
Charlton	322.2	69.3	--	142.0	--	0.9	142.9	30.7
Chatham	121.7	96.8	--	2.4	0.1	1.5	4.0	3.2
Clinch	474.1	96.9	--	14.9	--	0.1	15.0	3.1
Coffee	249.6	100.0	--	--	0.1	(1/)	0.1	(2/)
Dodge	175.3	100.0	--	--	--	--	--	--
Echols	254.7	100.0	--	--	--	--	--	--
Effingham	252.7	100.0	--	--	--	0.1	0.1	(2/)
Emanuel	283.1	99.9	--	--	--	0.2	0.2	0.1
Evans	62.3	80.8	--	14.8	--	(1/)	14.8	19.2
Glynn	170.0	96.9	--	2.5	2.8	0.1	5.4	3.1
Jeff Davis	170.7	100.0	--	--	--	--	--	--
Jenkins	100.8	99.2	--	(1/)	0.8	--	0.8	0.8
Johnson	98.2	100.0	--	--	--	(1/)	(1/)	--
Laurens	273.4	99.9	--	(1/)	--	0.2	0.2	0.1
Liberty	139.1	56.2	--	108.3	--	(1/)	108.3	43.8
Long	215.3	90.3	--	23.0	--	--	23.0	9.7
McIntosh	168.4	98.1	--	2.9	--	0.3	3.2	1.9
Montgomery	95.1	100.0	--	--	--	--	--	--
Pierce	158.1	99.9	--	--	--	0.1	0.1	0.1
Screven	235.1	99.6	--	--	--	1.0	1.0	0.4
Tattnall	212.7	96.2	--	5.1	3.3	--	8.4	3.8
Telfair	190.1	100.0	--	--	(1/)	(1/)	(1/)	--
Toombs	143.3	99.5	--	--	0.4	0.3	0.7	0.5
Treutlen	80.9	100.0	--	--	--	--	--	--
Ware	315.0	63.0	--	151.3	31.4	2.1	184.8	37.0
Wayne	359.5	99.6	--	--	--	1.3	1.3	0.4
Wheeler	129.6	99.1	--	--	1.2	(1/)	1.2	0.9
Unit total	7,032.4	92.2	--	539.2	46.6	8.6	594.4	7.8

1/ Less than 50 acres.

2/ Less than 0.05 percent.

Table 24.--Net volume[1] of saw timber by county and species group, 1952

(In million board feet)

County	Softwoods[2]	Gum, maple, and yellow-poplar[3]	Other hardwoods	All species
Appling	365.1	28.2	46.0	439.3
Atkinson	280.2	68.8	--	349.0
Bacon	185.2	36.9	1.9	224.0
Brantley	348.6	98.6	19.9	467.1
Bryan	340.8	141.2	30.8	512.8
Bulloch	294.8	101.9	27.7	424.4
Camden	415.4	57.4	119.6	592.4
Candler	113.5	15.0	7.1	135.6
Charlton	799.3	149.2	20.2	968.7
Chatham	200.5	98.2	37.4	336.1
Clinch	743.6	45.5	--	789.1
Coffee	502.7	81.9	24.9	609.5
Dodge	265.1	25.7	28.0	318.8
Echols	515.8	25.9	2.6	544.3
Effingham	248.4	207.2	70.5	526.1
Emanuel	309.8	117.0	15.1	441.9
Evans	123.2	16.9	4.7	144.8
Glynn	285.3	74.6	50.0	409.9
Jeff Davis	239.3	17.2	41.1	297.6
Jenkins	77.5	57.2	49.9	184.6
Johnson	129.4	75.5	40.0	244.9
Laurens	202.1	139.5	198.7	540.3
Liberty	387.9	105.1	89.1	582.1
Long	254.9	65.4	94.8	415.1
McIntosh	142.4	46.0	27.1	215.5
Montgomery	137.0	26.0	28.2	191.2
Pierce	229.9	50.6	1.5	282.0
Screven	196.0	132.0	82.2	410.2
Tattnall	299.3	74.0	37.6	410.9
Telfair	294.0	54.4	60.9	409.3
Toombs	223.8	68.4	34.8	327.0
Treutlen	189.1	19.4	9.2	217.7
Ware	754.9	65.2	--	820.1
Wayne	511.6	86.9	54.7	653.2
Wheeler	205.5	67.0	56.6	329.1
Unit total	10,811.9	2,539.9	1,412.8	14,764.6

[1] Log scale, International 1/4-inch rule.

[2] Includes pine, cypress, and cedar.

[3] Includes other soft-textured hardwoods.

Table 25.--Net volume[1] of saw timber by county, broad species group, and diameter-class group, 1952

County	Softwoods		Hardwoods		Softwoods	Hardwoods
	9-14 inches	15+ inches	11-14 inches	15+ inches		
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent	Percent
Appling	319.4	45.7	18.1	56.1	83.1	16.9
Atkinson	232.3	47.9	30.9	37.9	80.3	19.7
Bacon	160.9	24.3	24.1	14.7	82.7	17.3
Brantley	274.5	74.1	44.9	73.6	74.6	25.4
Bryan	208.2	132.6	82.9	89.1	66.5	33.5
Bulloch	221.9	72.9	72.8	56.8	69.5	30.5
Camden	304.7	110.7	67.0	110.0	70.1	29.9
Candler	99.1	14.4	16.7	5.4	83.7	16.3
Charlton	511.1	288.2	87.8	81.6	82.5	17.5
Chatham	70.3	130.2	51.2	84.4	59.7	40.3
Clinch	625.7	117.9	21.4	24.1	94.2	5.8
Coffee	399.0	103.7	76.3	30.5	82.5	17.5
Dodge	224.7	40.4	17.4	36.3	83.2	16.8
Echols	469.0	46.8	24.7	3.8	94.8	5.2
Effingham	188.1	60.3	66.9	210.8	47.2	52.8
Emanuel	243.4	66.4	61.2	70.9	70.1	29.9
Evans	99.8	23.4	10.1	11.5	85.1	14.9
Glynn	165.8	119.5	71.3	53.3	69.6	30.4
Jeff Davis	214.3	25.0	18.0	40.3	80.4	19.6
Jenkins	53.0	24.5	38.1	69.0	42.0	58.0
Johnson	91.9	37.5	58.0	57.5	52.8	47.2
Laurens	168.2	33.9	140.1	198.1	37.4	62.6
Liberty	258.2	129.7	78.0	116.2	66.6	33.4
Long	217.6	37.3	64.3	95.9	61.4	38.6
McIntosh	115.1	27.3	32.6	40.5	66.1	33.9
Montgomery	110.8	26.2	19.5	34.7	71.7	28.3
Pierce	207.8	22.1	31.8	20.3	81.5	18.5
Screven	142.3	53.7	63.0	151.2	47.8	52.2
Tattnall	257.4	41.9	47.0	64.6	72.8	27.2
Telfair	236.1	57.9	65.9	49.4	71.8	28.2
Toombs	184.2	39.6	48.4	54.8	68.4	31.6
Treutlen	166.9	22.2	14.9	13.7	86.9	13.1
Ware	600.2	154.7	34.7	30.5	92.0	8.0
Wayne	399.2	112.4	53.1	88.5	78.3	21.7
Wheeler	164.7	40.8	38.0	85.6	62.4	37.6
Unit total	8,405.8	2,406.1	1,691.1	2,261.6	73.2	26.8

[1] Log scale, International 1/4-inch rule.

Table 26.--Net volume[1/] of all timber by county, pulping species group, and tree diameter group, 1952

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft-textured hdwds.		Hard-textured hdwds.		All species
	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	
Appling	1,519	269	95	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Atkinson	865	293	[illegible]	11	[illegible]	142	4	--	[illegible]
Bacon	764	132	[illegible]	4	[illegible]	62	8	[illegible]	[illegible]
Brantley	933	279	[illegible]	[illegible]	349	202	21	46	2,050
Bryan	821	448	12	--	409	268	66	69	[illegible]
Bulloch	697	375	41	--	381	174	68	63	1,799
Camden	1,383	481	77	16	[illegible]	[illegible]	217	248	2,950
Candler	333	126	--	--	152	[illegible]	9	[illegible]	[illegible]
Charlton	1,981	315	[illegible]	612	447	[illegible]	[illegible]	29	4,007
Chatham	239	342	8	11	[illegible]	206	86	84	[illegible]
Clinch	2,589	587	601	[illegible]	[illegible]	88	--	—	4,168
Coffee	1,535	553	120	34	333	132	19	[illegible]	[illegible]
Dodge	924	260	11	[illegible]	121	[illegible]	63	66	[illegible]
Echols	1,703	321	301	[illegible]	148	29	[illegible]	[illegible]	2,541
Effingham	689	227	80	41	192	[illegible]	230	[illegible]	2,053
Emanuel	1,071	371	--	--	267	234	[illegible]	--	2,034
Evans	430	110	46	4	[illegible]	27	9	11	[illegible]
Glynn	441	351	68	79	[illegible]	141	[illegible]	107	1,606
Jeff Davis	[illegible]	243	20	--	[illegible]	[illegible]	8	[illegible]	1,320
Jenkins	211	79	8	28	[illegible]	127	104	110	[illegible]
Johnson	287	170	2	--	100	150	40	83	832
Laurens	814	187	7	11	[illegible]	[illegible]	136	445	2,240
Liberty	949	540	23	39	[illegible]	219	215	178	[illegible]
Long	996	239	87	41	170	130	[illegible]	211	[illegible]
McIntosh	276	119	73	[illegible]	261	82	59	44	[illegible]
Montgomery	445	157	2	3	[illegible]	[illegible]	10	59	[illegible]
Pierce	918	180	53	12	[illegible]	[illegible]	[illegible]	--	1,414
Screven	467	230	[illegible]	24	[illegible]	288	[illegible]	168	[illegible]
Tattnall	946	264	14	10	[illegible]	150	44	74	1,826
Telfair	1,158	295	[illegible]	--	244	[illegible]	105	113	2,021
Toombs	683	277	[illegible]	--	287	139	12	86	1,499
Treutlen	722	198	--	--	81	[illegible]	[illegible]	20	1,073
Ware	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	143	--	--	3,786
Wayne	2,033	459	230	[illegible]	[illegible]	168	[illegible]	120	[illegible]
Wheeler	628	236	--	4	[illegible]	144	[illegible]	[illegible]	[illegible]
Unit total	33,737	10,247	2,705	1,562	[illegible]	5,014	2,247	[illegible]	66,653

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft-textured hdwds.		Hard-textured hdwds.		All species
	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	
Appling	42	42	2	--	95	138	[illegible]	[illegible]	[illegible]
Atkinson	18	17	5	—	121	[illegible]	[illegible]	9	[illegible]
Bacon	36	12	2	3	109	[illegible]	[illegible]	1	288
Brantley	51	39	14	12	[illegible]	128	[illegible]	[illegible]	506
Bryan	33	79	1	--	145	262	67	[illegible]	678
Bulloch	13	17	3	9	154	144	[illegible]	110	[illegible]
Camden	43	47	68	8	131	130	224	[illegible]	997
Candler	20	[illegible]	--	--	68	68	29	17	215
Charlton	26	[illegible]	60	[illegible]	422	212	4	16	885
Chatham	22	19	[illegible]	11	100	128	111	209	607
Clinch	62	34	[illegible]	12	314	77	[illegible]	14	[illegible]
Coffee	67	27	3	--	[illegible]	[illegible]	[illegible]	28	405
Dodge	38	21	--	--	124	94	94	108	479
Echols	24	--	67	4	66	60	15	5	[illegible]
Effingham	30	2	5	21	51	[illegible]	105	[illegible]	642
Emanuel	20	5	--	--	138	182	81	37	463
Evans	15	14	[illegible]	[illegible]	69	[illegible]	26	14	[illegible]
Glynn	24	33	4	--	70	95	153	[illegible]	[illegible]
Jeff Davis	[illegible]	33	4	--	91	24	93	28	[illegible]
Jenkins	3	3	[illegible]	11	[illegible]	109	[illegible]	[illegible]	274
Johnson	26	11	--	—	121	[illegible]	39	[illegible]	[illegible]
Laurens	37	72	2	--	[illegible]	224	93	202	886
Liberty	29	10	9	36	149	[illegible]	58	198	712
Long	30	9	1	--	63	64	54	[illegible]	[illegible]
McIntosh	8	19	14	25	116	148	[illegible]	[illegible]	615
Montgomery	30	25	--	--	44	[illegible]	[illegible]	78	285
Pierce	36	21	6	--	[illegible]	102	47	—	357
Screven	29	42	4	54	243	[illegible]	[illegible]	102	[illegible]
Tattnall	58	24	15	--	[illegible]	128	122	[illegible]	[illegible]
Telfair	108	19	--	--	103	95	[illegible]	[illegible]	477
Toombs	2	--	--	--	[illegible]	[illegible]	10	[illegible]	431
Treutlen	12	12	--	-	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ware	107	28	16	181	162	90	[illegible]	3	621
Wayne	92	[illegible]	[illegible]	4	77	210	[illegible]	65	585
Wheeler	66	43	--	--	[illegible]	86	45	43	366
Unit total	1,313	810	366	[illegible]	4,467	4,484	2,341	2,978	17,284

[1/] Sound wood and bark.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing saw timber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

> Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually saw timber), (b) economically available now or in the future, and (c) not withdrawn from timber use.
>
> Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, and (b) incapable of yielding usable wood products (usually saw timber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land in any of the following classes:

> Active agriculture: Land under cultivation or in pasture including farm yards and work lots.
>
> Pasture: Land under fence used primarily for grazing purposes where the timber has been cleared to less than 10-percent stocking and a real attempt to produce a sod has been made.
>
> Idle agriculture: Land previously cultivated or pastured but now idle or abandoned and having less than a 10-percent stocking of forest trees.
>
> Marsh: Low, wet areas characterized by a heavy growth of grass and reeds and an absence of timber.
>
> Urban and other areas: Includes towns, residential and industrial suburban areas, school yards, cemeteries, roads, railroads, power lines, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems are the criteria.

Pine types: Forests in which 50 percent or more of the stand is in pine species. Plurality of volume or number of trees is used to determine the specific type.

Oak-pine type: Forests in which 50 percent or more of the stand is hardwood, usually upland oaks, but in which southern yellow pines make up 25-49 percent of the stand.

Oak-hickory type:

Upland hardwood: Forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, maple, gum, and other hardwoods, except where pines comprise 25-49 percent of the stand.

Scrub oak: Upland forests in which 50 percent or more of the stand is composed of scrub oak species, except where pines comprise 25-49 percent of the stand.

Oak-gum-cypress type:

Lowland hardwood: Bottomland forests in which 50 percent or more of the stand is tupelo,black gum, sweetgum, ash, oak, elm, maple, and associated species, except where pines comprise 25-49 percent of the stand.

Cypress: Bottomland forests in which 50 percent or more of the stand is cypress, except where pines comprise 25-49 percent of the stand.

Stand-Size Classes

Saw timber: Stands containing at least 1,500 board feet net volume per acre, 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of saw-timber stands are recognized:

Large saw timber: Stands of saw timber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small saw timber: Stands of saw timber having 50 percent or less of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Pole timber: Stands failing to meet the minimum saw-timber specifications, but at least 10-percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings: Stands not qualifying as saw-timber or pole-timber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as saw-timber, pole-timber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock:

Saw-timber trees: Live softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound saw timber.

Pole-timber trees: Straight-boled trees between 5.0 inches d.b.h. and saw-timber size.

Sapling-size trees: Trees 1.0 inch to 4.9 inches d.b.h. which will grow into pole- or saw-timber size trees of sound quality.

Other Material:

Sound cull trees: Live trees of all sizes that are unmerchantable for sawlogs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for sawlogs now or prospectively because of rotten defect.

Hardwood limbs: The limb volume of all hardwood saw-timber and cull trees to a minimum diameter of 4.0 inches inside bark.

Species Groups

Yellow pines: Includes longleaf, slash, loblolly, pond, and shortleaf pine.

Other softwoods: Pond cypress, baldcypress, eastern redcedar, and Atlantic white cedar.

Soft-textured hardwoods: Black and tupelo gum, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, magnolia, sweetbay, and willow.

Hard-textured hardwoods: All of the oaks, hickories, ash, beech, elm, river birch, hackberry, sycamore, black locust, mulberry, black walnut, holly, dogwood, and persimmon.

Volume Estimates

Board-foot volume: The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of all sawtimber size hardwoods is shown separately.

Volume in cubic feet: Same as volume shown in cords except bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 73 cubic feet of solid wood.

Gum Naval Stores Conditions

Round timber. A minimum of 15 longleaf and slash pine trees 9.0 inches d.b.h. or larger per acre that have not been worked for naval stores.

Working. Longleaf and slash pine trees that are now being worked for naval stores.

> Front-faced: Turpentine tree species on which the front or first face is now being worked.
>
> Back-faced: Turpentine tree species on which the front face has been worked out and on which a back (second or third, etc.) face is being worked.

Resting. Longleaf and slash pine trees with a worked-out or abandoned front face and on which back-facing has not been started.

Worked-out. Longleaf and slash pine trees on which two or more faces have been worked out and with no possibility of supporting another face.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest area.--The sampling intensity of the 1952 survey was sufficient to provide an estimate of the total forest acreage in the Unit with a standard error of ±0.6 percent. The probabilities are two out of three that the estimated forest acreage is within ±0.6 percent of the actual acreage.

Cubic volume.--The standard error of the 1952 net cubic-foot volume in the Unit was ±2.3 percent. Here again, the probabilities are two out of three that the estimated volume does not vary from the actual volume by more than this percentage. The standard error of the volume in cords was not computed but it should be approximately the same.

Board-foot volume.--The standard error of the 1952 estimate of board-foot volume in the Unit was ±2.5 percent.

Use of county data.--The tables showing area and timber volumes by county are included to permit grouping of the data in any desired combinations. The survey was designed so that the number of sample plots taken in each county would provide an estimate of the timber volume in cubic feet which would not exceed ±15 percent. The actual range of error of the cubic volume estimates by county is from ±9.2 percent to ±15.7 percent. The errors of board-foot volume estimates by county range from ±9.5 percent to ±16.2 percent, and of forest area from ±0.9 percent to ±7.9 percent.

In spite of the accuracy limit set on volume estimates by county, comparison of individual county statistics may be subject to considerable error and should be avoided. Grouping the data for a number of counties will increase the reliability and make the combined estimates sufficiently accurate for general use. For example, grouping the timber volume data for three counties with errors ranging from 9 to 16 percent resulted in a total volume estimate with only 7 percent error.

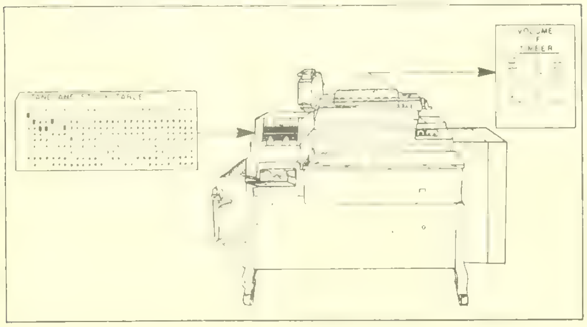
HOW THE FOREST INVENTORY IS MADE

The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:

1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, and mortality. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.

3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber drain is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia.

No. 22 - Southern Forests as a Source of Pulpwood.

No. 23 - 1946 Pulpwood Production by County in the Southeast.

No. 24 - Southern Pulpwood Production and the Timber Supply.

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina.

No. 26 - 1946 Commodity Drain by County from South Carolina Forests.

No. 27 - 1947 Pulpwood Production by County in the Southeast.

No. 28 - South Carolina's Forest Resources, 1947.

No. 29 - 1948 Pulpwood Production by County in the Southeast.

No. 30 - Forest Resources of Northeast Florida, 1949.

No. 31 - Forest Resources of Central Florida, 1949.

No. 32 - Forest Resources of Northwest Florida, 1949.

No. 33 - Forest Resources of South Florida, 1949.

No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948.

No. 36 - Forest Statistics for Florida, 1949.

No. 37 - Forest Statistics for Southwest Georgia, 1951.

No. 38 - 1951 Pulpwood Production in the South.

OTHER BULLETINS

Pulpwood Production in the South, 1950. Forest Survey Release No. 69.

Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681.

The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3.

Agriculture--Asheville

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FOREST SURVEY RELEASE NO. 40

JULY 1953

FOREST STATISTICS
FOR
CENTRAL GEORGIA, 1952

by

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Division of Forest Economics

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA

E. L. Demmon, Director

FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

The forest resources of the State of Georgia were first inventoried by the Forest Survey during the period 1934-36, and these findings have been published. Since that time, the effects of timber cutting, forest growth, changes in land use, better management practices, and other factors have caused rapid changes in the growing stock which can only be measured accurately by on-the-ground surveys. A resurvey of the forest resources in Georgia was started in July 1950. This progress report presents area and timber volume statistics compiled from the resurvey for Central Georgia, designated as Survey Unit No. 3, and also includes growth and drain data.

ACKNOWLEDGMENTS

The Southeastern Station gratefully acknowledges the cooperation and assistance of State Forester Guyton DeLoach, the University of Georgia School of Forestry, the Union Bag and Paper Corporation, and the Macon Kraft Company in providing additional personnel to increase the rate of progress on the field survey.

The Division of Forest Economics is under the direction of James W. Cruikshank. Field inventory work was supervised by L. C. Nix, and photo interpretation was done by R. C. Aldrich. Office compilation of the data was under the direction of Agnes Nichols, assisted by Louise Shuford, Camilla Young, Sammy Wenningham, and Eunice Gamble.

CONTENTS

Page

1952 HIGHLIGHTS AND SIGNIFICANT CHANGES 1

TABLES FOR THE SURVEY UNIT, 1952

AREA

1. Gross area by broad use class 8
2. Ownership of land 9
3. Commercial forest area by forest type and stand-size class 10

NET VOLUME OF SAWTIMBER

4. By species and stand-size class 11
5. By species and diameter class 12
6. By forest type and stand-size class 13

NET VOLUME OF ALL TIMBER (in thousand cords)

7. By species and stand-size class 14
8. By species and diameter class 15
9. By species and class of material 16
10. By forest type and stand-size class 17

NET VOLUME OF ALL TIMBER (in million cubic feet)

11. By species and diameter class 18
12. By species and class of material 19

AVERAGE VOLUME PER ACRE

13. Of sawtimber by forest type, species group, and stand-size class 20
14. Of all trees by forest type, species group, and stand-size class 21

GENERAL

15. Number of trees by species group, quality class, and tree size 22
16. Area of seedling, sapling, and poorly stocked stands by plantability class 23
17. Stocking on commercial forest area by forest type and tree-size class 24

NET ANNUAL GROWTH

18. Of sawtimber by stand-size class and species group 25
19. Of growing stock by stand-size class and species group 25

AVERAGE GROWTH PER ACRE

20. Of sawtimber by forest type and stand-size class 26
21. Of growing stock by forest type and stand-size class 26

ANNUAL NET GROWTH PERCENTAGES

22. For sawtimber volumes by stand-size class and species group 27
23. For growing stock volumes by stand-size class and species group 27

AVERAGE ANNUAL DRAIN

24. On sawtimber by tree-size class and species group 28
25. On growing stock by tree-size class and species group 28

NET CHANGE

26. In sawtimber volume by species group 29
27. In growing stock by species group 29

TABLES FOR COUNTIES, 1952

28. County area by broad use class 30
29. Ownership of commercial forest land 31
30. Net volume of sawtimber by species group 32
31. Net volume of sawtimber by broad species group and diameter class group 33
32. Net volume of all timber by pulping species group and tree-diameter group 34
33. Average annual sawtimber drain by species group 36
34. Average annual drain on growing stock by species group 37

DEFINITION OF TERMS 38

RELIABILITY OF THE DATA 43

HOW THE FOREST INVENTORY IS MADE 44

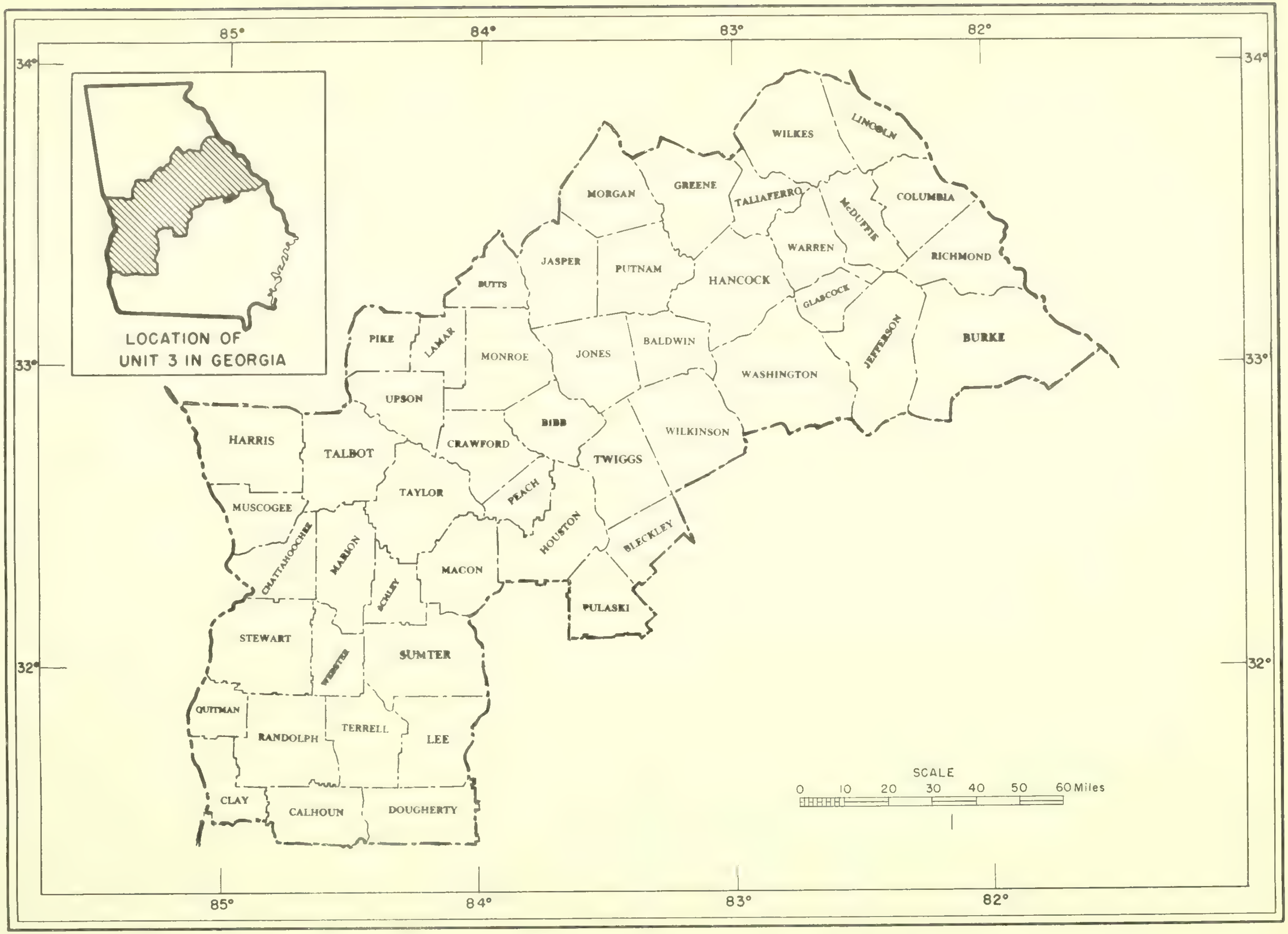

Figure 1.--Counties in Central Georgia included in Survey Unit No. 3

FOREST STATISTICS FOR CENTRAL GEORGIA, 1952

This progress report includes statistical data on forest area, timber volume, growth, and drain for 49 counties in Central Georgia designated as Survey Unit No. 3 (fig. 1). It is one of a series of reports being published as the survey work is completed in each section of the State. The field data were obtained from ground sample plots during the period April 1952 to December 1952. Procedures used in obtaining the estimates of land area and timber volumes are described briefly on page 44.

Central Georgia was covered by the original Forest Survey in 1936. The availability of these earlier statistics makes it possible to compare data for the two surveys and to evaluate changes and trends which have taken place during the past 16 years.

1952 HIGHLIGHTS AND SIGNIFICANT CHANGES

Forest land area increased more than one million acres.--Results of the 1952 survey in Central Georgia show the area of commercial forest land to be nearly 6.7 million acres as compared to 5.6 million in 1936. This amounts to a 20-percent increase in the acreage of forest land during the period between surveys. A corresponding reduction occurred in the acreage of crop and pasture land, indicating that the major shift in land use was from agriculture to forest.

The 49 counties in Central Georgia contain a gross land area of 10.5 million acres. Forests now occupy 6.7 million acres, or 64 percent of the total (fig. 2). Land in agricultural use accounts for 2.8 million acres, or about one-fourth of the gross area. Fields and pastures formerly used for agriculture but now classified as idle make up 700,000 acres, and cities, towns, rights-of-way, and other areas occupy the remaining 3 percent.

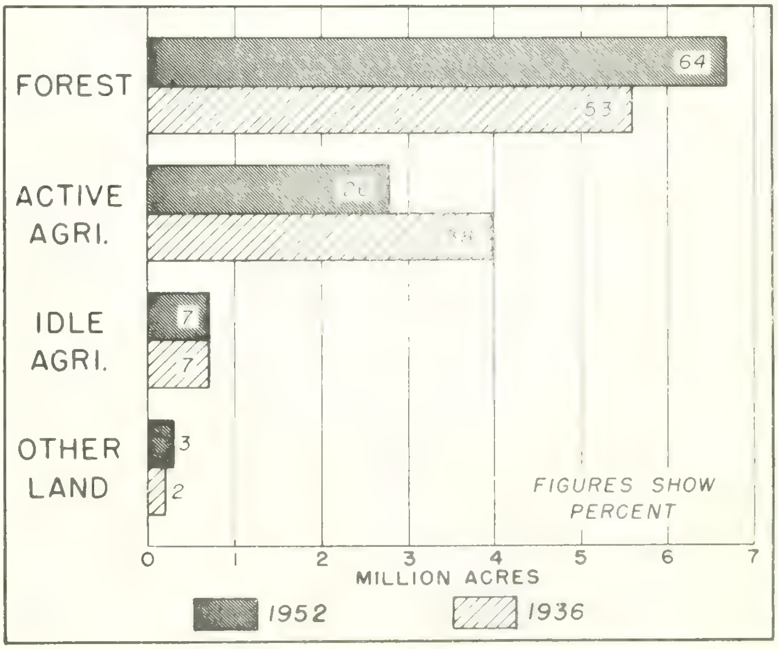

Figure 2.--Land use in Central Georgia, 1952 and 1936

The forest land is predominantly in private farm ownership. Publicly-owned forests account for only 5 percent of the total, with the bulk of this acreage in military reservations and the Clark Hill Dam project. About three-fourths of the forest land is on farms, and 19 percent is owned or operated by other private individuals and corporations.

Hardwood forest types gain in area.--Since 1936, hardwood forest types in Central Georgia increased from 1.3 million to 2.3 million acres, a gain of 77 percent in area. During the same period the more important pine types show a relatively small increase of 64 thousand acres, indicating they have held their own but have not added any substantial acreage. Increases in the area of hardwood types can usually be traced to cutting practices which remove the preferred pine species from the stands, leaving the less desirable hardwoods to occupy the site and serve as a source of seed. Similar trends have been found in recent surveys of other southeastern areas, and they may be expected to continue until control or corrective measures can be applied on a large scale.

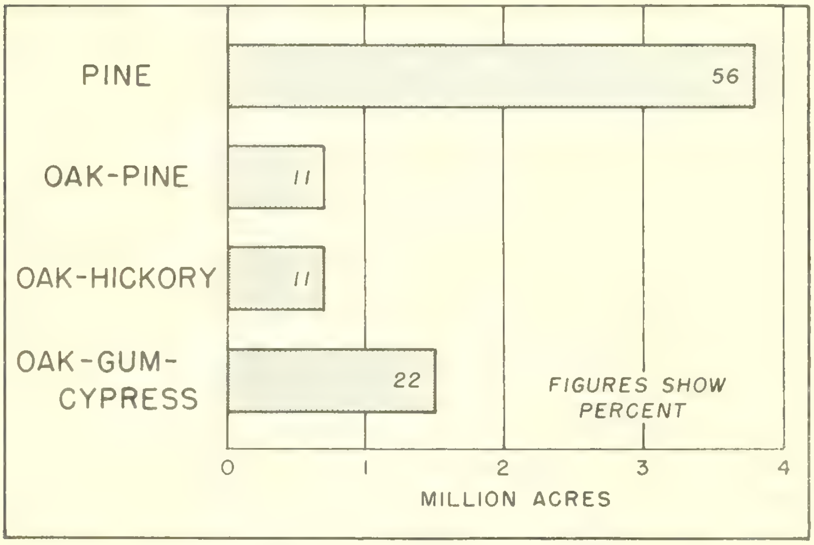

Figure 3.--Commercial forest land by forest type, 1952

Forest type classifications are currently based on cubic volume for all stands except seedlings and saplings, where numbers of stems are used. These classifications show that 67 percent of the forest land in Central Georgia is in pine or pine-hardwood types, and 33 percent is occupied by pure hardwood stands (fig. 3). Cypress stands are found on less than one percent of the area.

Greater number of small trees but fewer large ones.--One of the most revealing comparisons which can be made between two surveys is based on the number of trees found in each diameter class. Such a comparison by tree size and species group appears in table A. The number of saplings and smaller trees through the 10-inch diameter class increased heavily in all groups. These changes reflect over-all improvements in the stocking of young trees which can be attributed largely to better fire protection and natural restocking of abandoned agricultural land.

Table A also shows the effect of heavy demand for trees of larger size and better quality. Sharp decreases are evident in the number of trees in the 12-inch and larger diameter classes. The net effect of these changes has been a reduction in the number of pine and soft-textured hardwood trees of sawtimber size. It will require years of growth before smaller trees can replace the loss of volume in the larger, more valuable trees.

Table A.--Percent change in numbers of sound trees by species group and diameter class, 1936 to 1952

D.b.h. class (inches)	Yellow pine	Other soft-woods	Soft-textured hardwoods	Hard-textured hardwoods	All species
2	+27	+184	+47	+45	+39
4	+29	+210	+42	+91	+45
6	+27	+ 53	+20	+33	+26
8	+32	+ 29	+13	+32	+28
10	+11	+153	+27	+34	+19
12	-13	+116	+ 7	+28	- 1
14	-32	+211	- 5	+24	-15
16	-58	+ 21	-32	- 4	-40
18	-66	- 58	-40	- 1	-45
20+	-80	- 74	-58	-27	-60
All diameters	+23	+142	+38	+49	+35
All trees 6" and larger	+14	+ 67	+11	+27	+15
All saw-timber trees	-14	+105	-13	+10	-10

Changes shown in the number of pine trees are more significant than for other species groups because pines make up 42 percent of the total. The other softwood group accounts for less than one percent of all trees, making the changes shown for this group relatively unimportant. Soft-textured and hard-textured hardwoods account for 27 and 30 percent of the total number of trees respectively.

The reduction in numbers of large trees has had a widespread effect on stand structure and timber volumes. Seventy percent of the forest area is now in either seedling and sapling or pole-size stands and only 25 percent of the area supports stands of sawtimber.

Sawtimber volume decreases sharply.--The volume of sawtimber in Central Georgia decreased from 13.3 billion board feet in 1936 to 9.2 billion in 1952, a loss of 31 percent. Table B shows the effect of heavy utilization on both pine and hardwood species. The actual increase in cypress sawtimber volume is very minor.

Table B.--Sawtimber volume compared, 1936 and 1952

Species group	1936[1]	1952	Change
	Million bd. ft.	Million bd. ft.	Percent
Pines	7,756	4,845	-38
Hardwoods	5,443	4,231	-22
Cypress	100	140	+40
All species	13,299	9,216	-31

[1] Original survey volumes have been recomputed to allow for differences in standards between the two surveys and to provide a uniform basis for comparison. Thus, they will not agree with volumes previously published.

These changes may seem surprising in view of the large increase in forest area. However, much of the land which has recently reverted to forest supports only stands of seedlings and saplings which, as yet, contain no sawtimber volume. The more widely used pine sawtimber trees have been reduced by 2.9 billion board feet, or 38 percent. Hardwood volume exhibits a similar trend, being down 22 percent. The heavier use of pine usually has the effect of increasing the proportion of hardwoods in remaining stands of timber.

Pine species make up slightly more than half the present sawtimber volume. Loblolly is the most prevalent single species, accounting for two-thirds of the softwood volume. The remainder is mostly shortleaf pine, followed by small amounts of slash, longleaf, and pond pine. Hardwood trees contain 46 percent of the board-foot volume, the most important species being blackgum and sweetgum.

Sixty-nine percent of the sawtimber volume is in stands having an operable volume of 1,500 or more board feet per acre. The balance is scattered throughout stands of poletimber and young trees, making it difficult to harvest this portion. Only 14 percent of the volume is in trees 20 inches or larger in diameter.

Three-fourths of hardwood sawtimber volume poor quality.--All sawlogs in hardwood trees 12 inches or larger in diameter were graded in the 1952 survey, using the Hardwood Log Grades for Standard Lumber developed by the Forest Products Laboratory. Seventy-five percent of the board-foot volume in hardwood sawlogs was classified as grade 3, which will produce mostly low-quality factory lumber or crossties and timbers. Only 9 percent of the volume was classified as select or grade 1, and 16 percent was grade 2. This means that only one-fourth of the lumber produced from the average hardwood sawlog could be expected to make No. 1 common or better.

Softwood sawlogs, if sawn on grade, would yield somewhat better lumber. Modified Crossett Log Grades used in the survey indicate that 70 percent of the board-foot volume is in grade 1 or grade 2 logs and only 30 percent is in grade 3.

Growing stock decreases 14 percent in volume.--The total volume of growing stock is computed in terms of cubic feet of solid wood. It includes the volume of all sound pole-size trees (5.0 to 8.9 inches in diameter for softwoods and 5.0 to 10.9 inches for hardwoods), as well as the volume in sawtimber trees. Trees less than 5.0 inches in diameter at breast height are considered seedlings or saplings and are not assigned volumes for inventory purposes.

The heavy drain on trees of sawtimber size is responsible for an over-all decline of 14 percent in the growing stock. The trends by species group are similar to those for board-foot volume, with pine down 20 percent and hardwoods down 7 percent since 1936.

Table C.--Volume comparison, all live trees 5.0 inches d.b.h. and larger, 1936 and 1952

Species group	Growing stock			Cull trees		
	1936[1]	1952	Change	1936[1]	1952	Change
	Million cu. ft.	Million cu. ft.	Percent	Million cu. ft.	Million cu. ft.	Percent
Pines	2,143	1,722	-20	38	293	+671
Hardwoods[2]	1,655	1,535	- 7	404	704	+ 74
Cypress	28	40	+43	2	3	+ 50
All species	3,826	3,297	-14	444	1,000	+125

[1] See footnote 1, table B.

[2] Excludes limb volume of hardwood sawtimber trees.

Table C also includes the volumes of cull timber and shows changes which have occurred between surveys. The amount of material in cull trees is up sharply for both pine and hardwood species groups. Nearly one-fourth of the total available wood volume is in low-quality trees which are seldom harvested and remain to occupy valuable growing space.

Productive capacity of forest land hampered by poor stocking.--Only one-fifth of the forest land in Central Georgia can be classed as medium or well stocked with sound trees of usable size (5.0 inches and larger in diameter). The remaining area is deficient from a growing-stock standpoint, and this condition will seriously affect the timber-growing capacity of this area during the immediate future. When the smaller seedling- and sapling-size trees are included, the degree of stocking is considerably better, but it will require a number of years before these smaller trees can produce wood suitable for commercial use.

Supply of pine timber continues to diminish.--The amount of drain on pine timber continues to exceed the growth, causing a continuation of the downward trend which is evident from the survey volume comparisons. In 1952 the net board-foot growth of pine was estimated to be 644 million board feet as compared to 787 million board feet of drain. Drain on the volume of pine growing stock, which includes pole-size trees, also exceeded the growth (fig. 4).

The hardwood species are currently increasing in volume because of a relatively low rate of drain. Growth of hardwood saw-timber amounted to 293 million board feet in 1952 and the volume of drain was 226 million, or about three-fourths of the growth. The excess of growth over drain for hardwood growing stock amounted to 900 thousand cords.

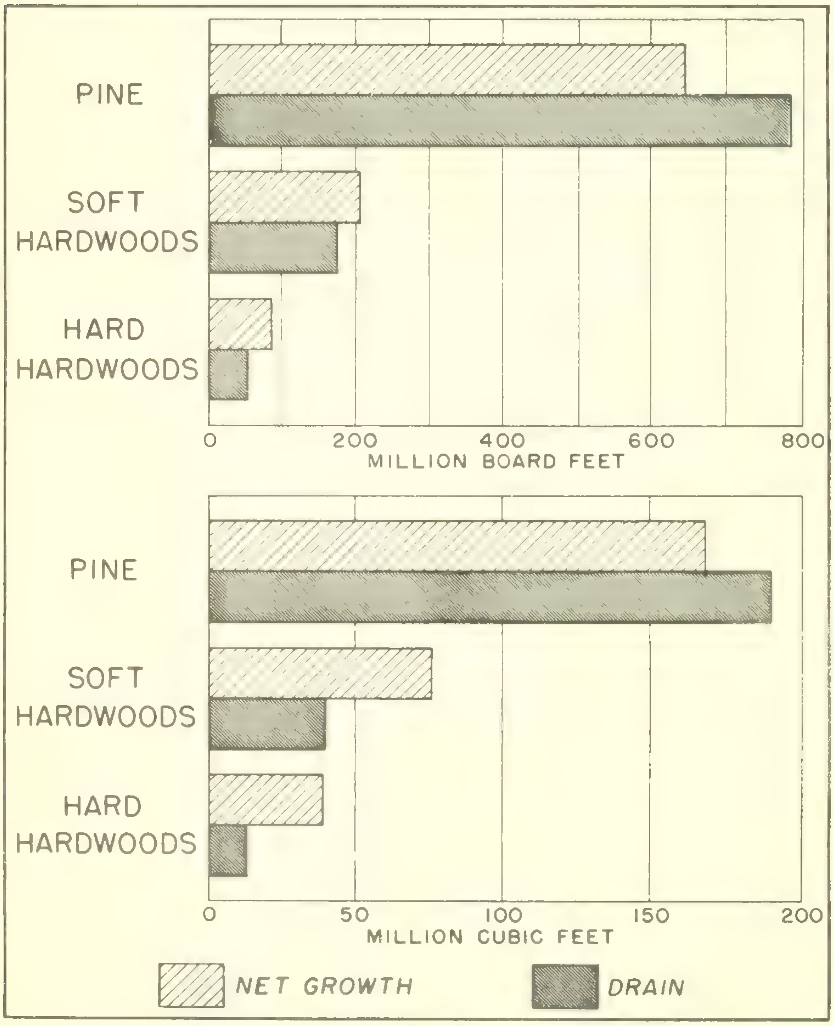

Figure 4.--Timber growth and drain relationship in Central Georgia, 1952

The net growth estimate is composed of the growth on all sound trees of volume size plus the ingrowth created by trees reaching volume size during the year. Mortality, or the loss of volume in trees which die from natural causes, is excluded. The timber drain estimate is based on the measurement and tally of stumps found on ground sample plots. Stumps of all trees cut during the past three-year period were recorded by species groups, and the measurements were converted into tree volume. The average volume of drain for the three-year period was taken as the annual estimate.

The rates of timber growth in Central Georgia are excellent as indicated by the net annual growth percents (tables 22 and 23). Pine sawtimber volume is increasing at the rate of 13 percent per annum, and all pine growing stock at 10 percent. However, in most stands the actual increase in volume per acre is relatively low because of poor stocking conditions. The average volume growth of sawtimber and growing stock per acre is 147 board feet and 0.6 cords respectively. Growth percentages, even though they are high, must be related to current volume before their effect can be evaluated. The forest lands in Central Georgia have the capacity to grow much more timber than they are producing at the present time. The remedy is to build up the growing stock.

Table 1.--Gross area[1] by broad use class, 1952

Class of use	Area	
	Thousand acres	Percent
Forest land:		
Commercial	6,687.5	62.9
Noncommercial:		
Reserved from commercial use	--	--
Unproductive for timber use	2.2	([2])
Total forest	6,689.7	62.9
Nonforest land:		
Agriculture - active	2,081.0	19.6
Agriculture - idle	720.3	6.8
Pasture	669.6	6.3
Marsh	31.8	0.3
Urban and other[3]	312.8	2.9
Total nonforest	3,815.5	35.9
Total land area	10,505.2	98.8
Total water area[4]	128.6	1.2
All classes	10,633.8	100.0

[1] From U. S. Bureau of the Census, 1950.

[2] Less than 0.05 percent.

[3] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

[4] Includes 56,400 acres of water according to Survey standards of area classification but defined by the Bureau of Census as land.

Table 2.--Ownership of land, 1952

Class of ownership	All land		Commercial forest land	
	Thousand acres	Percent	Thousand acres	Percent
Public land:				
National forest	4.6	(2/)	4.6	0.1
Indian	--	--	--	--
Other federal	425.7	4.1	311.5	4.6
Total federal	430.3	4.1	316.1	4.7
State	47.7	0.5	34.8	0.5
County and municipal	12.3	0.1	3.3	0.1
Total public	490.3	4.7	354.2	5.3
Private land:				
Farm	(1/)	--	5,054.0	75.6
Other	(1/)	--	1,279.3	19.1
Total private	10,014.9	95.3	6,333.3	94.7
All classes	10,505.2	100.0	6,687.5	100.0

1/ Data not available.

2/ Less than 0.05 percent.

Table 3.--Commercial forest area by forest type and stand-size class, 1952

(In thousand acres)

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	12.9	60.4	120.9	48.4	29.7	272.3
Slash pine	3.0	8.1	12.4	37.3	1.8	62.6
Loblolly pine	91.1	560.9	1,027.2	849.1	86.1	2,614.4
Shortleaf pine	11.6	136.9	429.5	210.8	6.9	795.7
Pond pine	2.0	8.7	2.5	--	--	13.2
Total	120.6	775.0	1,592.5	1,145.6	124.5	3,758.2
Other types:						
Oak-pine	44.9	84.7	257.4	302.8	28.4	718.2
Oak-hickory:						
Upland hdwds.	41.8	37.7	215.8	211.1	19.8	526.2
Scrub oak	--	--	3.5	56.0	152.4	211.9
Oak-gum-cypress:						
Lowland hdwds.	309.5	248.9	547.6	326.3	12.9	1,445.2
Cypress	--	20.8	5.8	--	1.2	27.8
Total	396.2	392.1	1,030.1	896.2	214.7	2,929.3
All types	516.8	1,167.1	2,622.6	2,041.8	339.2	6,687.5
Percent	7.7	17.5	39.2	30.5	5.1	100.0

[1] See description of forest types and stand-size classes in appendix.

Table 4.--Net volume[1] of sawtimber by species and stand-size class, 1952

(In million board feet)

Species[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	69.8	191.4	85.5	37.7	9.6	394.0
Slash pine	13.0	31.4	8.8	6.8	--	60.0
Loblolly pine	480.5	1,796.3	832.5	183.4	17.7	3,310.4
Pond pine	1.2	32.0	3.7	2.3	0.9	40.1
Shortleaf pine	76.8	513.3	362.8	85.1	3.1	1,041.1
Total pine	641.3	2,564.4	1,293.3	315.3	31.3	4,845.6
Cypress	24.3	107.3	3.2	--	--	134.8
Cedar	--	0.6	2.4	2.3	--	5.3
Total sftwds.	665.6	2,672.3	1,298.9	317.6	31.3	4,985.7
Hardwoods:						
Bl. & tupelo gum	465.6	319.6	134.3	45.9	1.8	967.2
Sweetgum	392.1	279.6	270.7	46.7	2.3	991.4
Yellow-poplar	186.2	88.2	92.4	20.6	0.4	387.8
Soft maple	55.7	36.2	31.4	7.7	--	131.0
Other soft hdwds.	35.1	53.7	36.5	3.5	--	128.8
Total	1,134.7	777.3	565.3	124.4	4.5	2,606.2
White & swamp chestnut oaks	100.0	36.7	54.0	3.9	--	194.6
Other white oaks	64.2	34.1	28.1	11.0	--	137.4
No. red & swamp red oaks	27.2	12.0	18.4	1.7	--	59.3
Other red oaks	248.5	157.9	147.9	55.5	1.3	611.1
Hickory	106.7	54.8	92.3	10.8	--	264.6
Ash	46.8	24.2	20.9	1.2	--	93.1
Other hard hdwds.	129.0	70.6	54.2	10.7	--	264.5
Total	722.4	390.3	415.8	94.8	1.3	1,624.6
Total hdwds.	1,857.1	1,167.6	981.1	219.2	5.8	4,230.8
All species	2,522.7	3,839.9	2,280.0	536.8	37.1	9,216.5
Percent	27.4	41.7	24.7	5.8	0.4	100.0

[1] Log scale, International 1/4-inch rule.

[2] See appendix for species combined with others.

Table 5.--Net volume[1] of sawtimber by species and diameter class, 1952

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent
Softwoods:						
Longleaf pine	222.6	123.7	47.7	--	394.0	4.3
Slash pine	30.4	29.6	--	--	60.0	0.7
Loblolly pine	1,876.4	1,227.9	170.8	35.3	3,310.4	35.9
Pond pine	21.2	18.9	--	--	40.1	0.4
Shortleaf pine	765.2	254.4	21.5	--	1,041.1	11.3
Total pine	2,915.8	1,654.5	240.0	35.3	4,845.6	52.6
Cypress	62.5	65.1	7.2	--	134.8	1.4
Cedar	2.0	3.3	--	--	5.3	0.1
Total sftwds.	2,980.3	1,722.9	247.2	35.3	4,985.7	54.1
Hardwoods:						
Bl. & tupelo gum	278.5	528.2	132.4	28.1	967.2	10.5
Sweetgum	278.2	564.7	114.2	34.3	991.4	10.8
Yellow-poplar	82.8	198.6	70.4	36.0	387.8	4.2
Soft maple	34.5	81.8	14.7	--	131.0	1.4
Other soft hdwds.	32.5	87.6	2.6	6.1	128.8	1.4
Total	706.5	1,460.9	334.3	104.5	2,606.2	28.3
White & swamp chestnut oaks	28.7	83.8	52.8	29.3	194.6	2.1
Other white oaks	21.4	50.6	17.8	47.6	137.4	1.5
No. red and swamp red oaks	9.3	34.2	15.0	0.8	59.3	0.6
Other red oaks	98.5	299.7	145.1	67.8	611.1	6.6
Hickory	47.5	127.7	71.2	18.2	264.6	2.9
Ash	25.5	50.6	17.0	--	93.1	1.0
Other hard hdwds.	70.1	134.0	45.2	15.2	264.5	2.9
Total	301.0	780.6	364.1	178.9	1,624.6	17.6
Total hdwds.	1,007.5	2,241.5	698.4	283.4	4,230.8	45.9
All species	3,987.8	3,964.4	945.6	318.7	9,216.5	100.0
Percent	43.3	43.0	10.3	3.4	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included.

Table 6.--Net volume[1] of sawtimber by forest type and stand-size class, 1952

(In million board feet)

Forest type[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	51.0	194.9	73.9	16.5	9.1	345.4
Slash pine	13.0	31.8	0.3	2.0	--	47.1
Loblolly pine	474.7	1,869.4	753.9	108.2	20.1	3,226.3
Shortleaf pine	48.1	456.6	353.2	44.8	0.8	903.5
Pond pine	5.0	23.0	0.9	--	--	28.9
Total	591.8	2,575.7	1,182.2	171.5	30.0	4,551.2
Other types:						
Oak-pine	198.6	210.4	267.0	92.8	1.7	770.5
Oak-hickory:						
Upland hdwds.	149.4	109.2	211.9	68.1	--	538.6
Scrub oak	--	--	0.6	5.6	4.3	10.5
Oak-gum-cypress:						
Lowland hdwds.	1,582.9	833.8	615.7	198.8	1.1	3,232.3
Cypress	--	110.8	2.6	--	--	113.4
Total	1,930.9	1,264.2	1,097.8	365.3	7.1	4,665.3
All types	2,522.7	3,839.9	2,280.0	536.8	37.1	9,216.5
Percent	27.4	41.7	24.7	5.8	0.4	100.0

[1] Log scale, International 1/4-inch rule.

[2] See description of forest types and stand-size classes in appendix.

Table 7.--Net volume[1] of all timber by species and stand-size class, 1952

(In thousand cords)

GROWING STOCK

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	188	721	581	131	41	1,662
Slash pine	33	151	121	25	18	348
Loblolly pine	1,285	7,245	6,299	962	52	15,843
Pond pine	4	108	26	13	3	154
Shortleaf pine	249	2,330	3,158	414	10	6,161
Total pine	1,759	10,555	10,185	1,545	124	24,168
Cypress	67	368	36	--	--	471
Cedar	--	2	11	6	--	19
Total sftwds.	1,826	10,925	10,232	1,551	124	24,658
Hardwoods:						
Bl. & tupelo gum	1,688	1,750	986	174	5	4,603
Sweetgum	1,493	1,634	2,048	312	6	5,493
Yellow-poplar	598	404	622	119	1	1,744
Soft maple	195	224	263	42	--	724
Other soft hdwds.	153	220	229	14	--	616
Total	4,127	4,232	4,148	661	12	13,180
White & swamp chestnut oaks	346	185	387	33	--	951
Other white oaks	204	144	238	41	--	627
No. red & swamp red oaks	74	52	104	15	--	245
Other red oaks	805	671	1,064	242	4	2,786
Hickory	396	237	399	42	11	1,085
Ash	166	110	236	4	--	516
Dogwood, persimmon	52	30	94	21	--	197
Other hard hdwds.	445	348	484	55	--	1,332
Total	2,488	1,777	3,006	453	15	7,739
Total hdwds.	6,615	6,009	7,154	1,114	27	20,919
All species	8,441	16,934	17,386	2,665	151	45,577
Percent	18.5	37.2	38.1	5.9	0.3	100.0
OTHER MATERIAL						
Sound culls						
Softwoods	115	831	2,004	943	148	4,041
Hardwoods[2]	1,649	1,470	3,506	1,552	341	8,518
Rotten culls	218	331	447	140	3	1,139
Hardwood limbs	1,263	865	975	287	27	3,417
Total other material	3,245	3,497	6,932	2,922	519	17,115

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 8.--Net volume[1] of all timber by species and diameter class, 1952

(In thousand cords)

GROWING STOCK

Species	Pole trees		Sawtimber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	185	414	384	265	306	108	1,662
Slash pine	106	77	44	45	76	--	348
Loblolly pine	2,455	3,785	3,101	2,815	3.214	473	15,843
Pond pine	6	26	41	28	53	--	154
Shortleaf pine	1,244	1,868	1,419	907	672	51	6,161
Total pine	3,996	6,170	4,989	4,060	4,321	632	24.168
Cypress	40	54	90	101	170	16	471
Cedar	4	--	4	2	9	--	19
Total sftwds.	4,040	6,224	5,083	4,163	4,500	648	24,658
Hardwoods:							
Bl. & tupelo gum	258	586	1,017	876	1,470	396	4,603
Sweetgum	705	934	1,062	870	1,556	366	5,493
Yellow-poplar	144	182	368	252	538	260	1,744
Soft maple	95	164	102	106	220	37	724
Other soft hdwds.	58	83	115	99	239	22	616
Total	1,260	1,949	2,664	2,203	4,023	1,081	13,180
White & swamp chestnut oaks	113	128	180	88	233	209	951
Other white oaks	91	66	95	70	141	164	627
No. red & swamp red oaks	26	16	37	31	94	41	245
Other red oaks	344	411	336	325	830	540	2,786
Hickory	72	136	143	153	354	227	1,085
Ash	64	75	115	80	139	43	516
Dogwood, persimmon	114	22	14	16	31	--	197
Other hard hdwds.	151	150	330	207	345	149	1,332
Total	975	1,004	1,250	970	2,167	1,373	7,739
Total hdwds.	2,235	2,953	3,914	3.173	6,190	2.454	20,919
All species	6,275	9,177	8,997	7,336	10,690	3,102	45,577
Percent	13.8	20.1	19.7	16.1	23.5	6.8	100.0

OTHER MATERIAL

Species	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	All diameters
Sound culls							
Softwoods	548	571	1,024	748	980	170	4,041
Hardwoods[2]	1,369	1,245	1,459	918	2,079	1,448	8,518
Rotten culls	67	97	92	90	377	416	1,139
Hardwood limbs	--	--	--	762	1,760	895	3,417
Total other material	1,984	1,913	2.575	2 518	5,196	2,929	17.115

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[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 9.--Net volume[1] of all timber by species and class of material, 1952

(In thousand cords)

Species	GROWING STOCK				OTHER MATERIAL	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	854	209	599	1,662	135	1
Slash pine	136	29	183	348	43	--
Loblolly pine	7,781	1,822	6,240	15,843	2,882	54
Pond pine	96	26	32	154	10	--
Shortleaf pine	2,488	561	3,112	6,161	938	1
Total pine	11,355	2,647	10,166	24,168	4,008	56
Cypress	300	77	94	471	23	4
Cedar	11	4	4	19	10	--
Total sftwds.	11,666	2,728	10,264	24,658	4,041	60
Hardwoods:						
Bl. & tupelo gum	2,179	563	1,861	4,603	1,837	268
Sweetgum	2,228	564	2,701	5,493	1,933	279
Yellow-poplar	851	199	694	1,744	578	45
Soft maple	292	71	361	724	953	153
Other soft hdwds.	288	72	256	616	597	57
Total	5,838	1,469	5,873	13,180	5,898	802
White & swamp chestnut oaks	418	112	421	951	356	23
Other white oaks	296	79	252	627	518	20
No. red & swamp red oaks	126	40	79	245	139	7
Other red oaks	1,322	373	1,091	2,786	2,084	261
Hickory	579	155	351	1,085	628	35
Ash	212	50	254	516	345	43
Dogwood, persimmon	38	9	150	197	121	3
Scrub oak[3]	--	--	--	--	923	--
Other hard hdwds.	556	145	631	1,332	755	53
Total	3,547	963	3,229	7,739	5,869	445
Total hdwds.	9,385	2,432	9,102	20,919	11,767	1,247
All species	21,051	5,160	19,366	45,577	15,808	1,307
Percent	46.2	11.3	42.5	100.0	92.4	7.6

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[1] Sound wood and bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes noncommercial species.

Table 10.--Net volume[1] of all timber by forest type and stand-size class, 1952

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	153	744	528	54	38	1,517
Slash pine	33	157	77	22	--	289
Loblolly pine	1,503	8,195	6,653	809	74	17,234
Shortleaf pine	150	1,995	2,777	230	2	5.154
Pond pine	13	83	3	--	--	99
Total	1,852	11,174	10,038	1,115	114	24,293
Other types:						
Oak-pine	617	912	1,680	423	16	3,648
Oak-hickory:						
Upland hdwds.	562	446	1,186	282	--	2.476
Scrub oak	--	--	6	16	18	40
Oak-gum-cypress:						
Lowland hdwds.	5,410	3,946	4,456	829	3	14,644
Cypress	--	456	20	--	--	476
Total	6,589	5,760	7,348	1.550	37	21,284
All types	8.441	16,934	17.386	2,665	151	45,577
Percent	18.5	37.2	38.1	5.9	0.3	100.0

OTHER MATERIAL

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	49	57	104	21	22	253
Slash pine	--	16	20	15	--	51
Loblolly pine	223	1,071	2,029	902	208	4,433
Shortleaf pine	42	227	669	194	2	1.134
Pond pine	--	8	--	--	--	8
Total	314	1,379	2,822	1.132	232	5.879
Other types:						
Oak-pine	211	258	763	303	15	1,550
Oak-hickory:						
Upland hdwds.	199	203	732	388	18	1.540
Scrub oak	--	--	4	108	186	298
Oak-gum-cypress:						
Lowland hdwds.	2,521	1,570	2,611	991	67	7,760
Cypress	--	87	--	--	1	88
Total	2,931	2,118	4,110	1,790	287	11,236
All types	3,245	3,497	6,932	2,922	519	17,115
Percent	19.0	20.4	40.5	17.1	3.0	100.0

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[1] Sound wood and bark.

Table 11.--Net volume[1] of all timber by species and diameter class, 1952

(In million cubic feet)

GROWING STOCK

Species	Pole trees		Sawtimber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	11.3	27.8	27.8	20.4	24.4	9.0	120.7
Slash pine	6.5	5.2	3.3	3.6	6.0	--	24.6
Loblolly pine	144.0	254.6	226.2	214.8	256.6	40.2	1,136.4
Pond pine	0.3	1.7	3.0	2.0	4.2	--	11.2
Shortleaf pine	72.9	125.6	104.1	69.0	53.2	4.3	429.1
Total pine	235.0	414.9	364.4	309.8	344.4	53.5	1,722.0
Cypress	2.7	4.0	7.0	8.6	14.7	1.5	38.5
Cedar	0.2	--	0.4	0.1	0.8	--	1.5
Total sftwds.	237.9	418.9	371.8	318.5	359.9	55.0	1,762.0
Hardwoods:							
Bl. & tupelo gum	15.8	38.3	70.9	66.9	116.2	32.5	340.6
Sweetgum	42.6	61.2	74.1	66.7	124.1	29.9	398.6
Yellow-poplar	8.6	11.8	25.7	19.7	42.7	21.5	130.0
Soft maple	5.7	10.7	7.0	8.2	17.5	3.0	52.1
Other soft hdwds.	3.6	5.5	8.0	7.7	18.8	1.8	45.4
Total	76.3	127.5	185.7	169.2	319.3	88.7	966.7
White & swamp chestnut oaks	6.9	8.5	12.4	6.8	18.4	17.0	70.0
Other white oaks	5.5	4.3	6.7	5.1	11.2	13.5	46.3
No. red & swamp red oaks	1.7	1.0	2.6	2.2	7.6	3.3	18.4
Other red oaks	20.8	27.1	23.3	23.3	66.0	44.2	204.7
Hickory	4.5	9.0	9.9	11.3	28.0	18.6	81.3
Ash	3.9	4.9	8.0	6.0	11.2	3.5	37.5
Dogwood, persimmon	7.1	1.5	1.0	1.1	2.4	--	13.1
Other hard hdwds.	9.2	9.9	22.9	15.5	27.3	12.5	97.3
Total	59.6	66.2	86.8	71.3	172.1	112.6	568.6
Total hdwds.	135.9	193.7	272.5	240.5	491.4	201.3	1,535.3
All species	373.8	612.6	644.3	559.0	851.3	256.3	3,297.3
Percent	11.3	18.6	19.5	17.0	25.8	7.8	100.0

OTHER MATERIAL

Species	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	All diameters
Sound culls							
Softwoods	32.4	38.5	71.4	55.9	77.8	14.9	290.9
Hardwoods[2]	82.9	82.2	101.5	69.7	165.2	118.8	620.3
Rotten culls	3.9	6.5	6.4	7.3	29.7	34.7	88.5
Hardwood limbs	--	--	--	57.2	132.4	73.4	263.0
Total other material	119.2	127.2	179.3	190.1	405.1	241.8	1,262.7

[1] Excluding bark.

[2] Includes noncommercial species.

Table 12.--Net volume[1] of all timber by species and class of material, 1952

(In million cubic feet)

Species	GROWING STOCK				OTHER MATERIAL	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	65.8	15.8	39.1	120.7	9.6	0.1
Slash pine	10.5	2.4	11.7	24.6	3.0	--
Loblolly pine	599.1	138.7	398.6	1,136.4	209.5	4.1
Pond pine	7.5	1.7	2.0	11.2	0.7	--
Shortleaf pine	186.8	43.8	198.5	429.1	65.6	0.1
Total pine	869.7	202.4	649.9	1,722.0	288.4	4.3
Cypress	26.0	5.8	6.7	38.5	1.6	0.4
Cedar	1.0	0.3	0.2	1.5	0.9	--
Total sftwds.	896.7	208.5	656.8	1,762.0	290.9	4.7
Hardwoods:						
Bl. & tupelo gum	173.3	42.3	125.0	340.6	135.7	20.9
Sweetgum	177.0	43.7	177.9	398.6	145.7	21.3
Yellow-poplar	67.5	16.4	46.1	130.0	46.2	3.7
Soft maple	23.2	5.5	23.4	52.1	70.6	12.0
Other soft hdwds.	22.9	5.4	17.1	45.4	43.9	4.4
Total	463.9	113.3	389.5	966.7	442.1	62.3
White & swamp chestnut oaks	33.8	8.4	27.8	70.0	27.0	1.9
Other white oaks	23.9	5.9	16.5	46.3	38.5	1.6
No. red & swamp red oaks	10.5	2.6	5.3	18.4	10.0	0.7
Other red oaks	107.2	26.3	71.2	204.7	156.5	20.6
Hickory	46.6	11.3	23.4	81.3	45.3	2.8
Ash	16.8	3.9	16.8	37.5	24.4	3.3
Dogwood, persimmon	2.9	0.6	9.6	13.1	7.7	0.2
Scrub oak[3]	--	--	--	--	62.4	--
Other hard hdwds.	44.6	10.7	42.0	97.3	55.7	4.1
Total	286.3	69.7	212.6	568.6	427.5	35.2
Total hdwds.	750.2	183.0	602.1	1,535.3	869.6	97.5
All species	1,646.9	391.5	1,258.9	3,297.3	1,160.5	102.2
Percent	49.9	11.9	38.2	100.0	91.9	8.1

[1] Excluding bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes noncommercial species.

Table 13.--Average volume[1] per acre of sawtimber by forest type, species group, and stand-size class, 1952

(In board feet)

Forest type and species group	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Other stand sizes	All stands
Longleaf pine					
Softwood	3,335	3,138	585	275	1,192
Hardwood	609	93	27	52	76
Slash pine					
Softwood	4,430	3,675	22	35	713
Hardwood	--	230	--	16	40
Loblolly pine					
Softwood	4,467	3,112	653	116	1,122
Hardwood	742	220	80	21	112
Shortleaf pine					
Softwood	2,346	3,219	772	168	1,051
Hardwood	1,810	116	50	42	85
Pond pine					
Softwood	2,521	2,138	370	--	1,865
Hardwood	--	509	--	--	336
Oak-pine					
Softwood	2,274	1,150	507	180	542
Hardwood	2,152	1,334	531	106	531
Upland hdwds.					
Softwood	286	195	111	130	139
Hardwood	3,283	2,702	871	166	884
Scrub oak					
Softwood	--	--	--	44	43
Hardwood	--	--	167	4	6
Lowland hdwds.					
Softwood	182	213	124	244	180
Hardwood	4,932	3,138	1,001	345	2,057
Cypress					
Softwood	--	4,331	340	--	3,312
Hardwood	--	986	110	--	760
All types					
Softwood	1,288	2,290	495	147	746
Hardwood	3,593	1,001	374	94	633

[1] Log scale, International 1/4-inch rule.

Table 14.--Average volume[1] per acre of all trees by forest type, species group, and stand-size class, 1952

(In standard cords)

Forest type and species group	Large sawtimber stands		Small sawtimber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[2]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	9.9	1.0	12.0	0.7	4.2	0.3	1.0	0.1	5.3	0.4
Hardwood	1.9	2.8	0.3	0.3	0.2	0.6	0.2	0.4	0.3	0.6
Slash pine										
Softwood	11.2	--	18.7	1.8	6.2	1.6	0.5	0.1	4.5	0.6
Hardwood	--	--	0.6	0.1	--	--	0.1	0.3	0.1	0.2
Loblolly pine										
Softwood	12.1	0.9	12.9	1.1	5.7	1.4	0.8	0.8	5.7	1.1
Hardwood	4.4	1.6	1.7	0.8	0.8	0.6	0.1	0.4	0.9	0.6
Shortleaf pine										
Softwood	6.7	--	13.7	0.7	6.0	1.0	0.9	0.7	5.9	0.8
Hardwood	6.3	3.6	0.8	0.9	0.5	0.6	0.2	0.2	0.6	0.6
Pond pine										
Softwood	6.5	--	8.1	--	1.2	--	--	--	6.5	--
Hardwood	--	--	1.5	0.9	--	--	--	--	1.0	0.6
Oak-pine										
Softwood	6.2	0.4	4.2	0.3	2.9	0.4	0.7	0.2	2.3	0.3
Hardwood	7.6	4.3	6.6	2.8	3.6	2.6	0.6	0.7	2.8	1.9
Upland hardwoods										
Softwood	1.1	(3/)	0.7	--	0.6	(3/)	0.4	0.1	0.6	0.1
Hardwood	12.3	4.7	11.1	5.4	4.9	3.3	0.8	1.7	4.1	2.9
Scrub oak										
Softwood	--	--	--	--	--	--	0.2	0.1	0.2	0.1
Hardwood	--	--	--	--	1.7	1.1	(3/)	1.3	(3/)	1.3
Lowland hardwoods										
Softwood	0.5	(3/)	0.7	0.1	0.6	(3/)	0.7	0.1	0.6	0.1
Hardwood	17.0	8.1	15.2	6.2	7.5	4.7	1.7	3.0	9.5	5.3
Cypress										
Softwood	--	--	15.3	1.0	3.1	--	--	0.8	12.1	0.8
Hardwood	--	--	6.6	3.2	0.3	--	--	--	5.0	2.4
All types										
Softwood	3.5	0.2	9.4	0.7	3.9	0.8	0.7	0.5	3.7	0.6
Hardwood	12.8	6.1	5.1	2.3	2.7	1.9	0.5	1.0	3.1	1.9

[1] Sound wood and bark.

[2] Sound trees; cull trees.

[3] Less than 0.05 cords per acre.

Table 15.--Number of trees[1] by species group, quality class, and tree size, 1952

(In thousands of trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small sawtimber trees	Large sawtimber trees	All trees
Yellow pines:					
Sound trees	647,431	195,173	68,218	4,635	915,457
Sound culls	143,592	30,225	17,567	1,327	192,711
Rotten culls	879	435	120	25	1,459
Total	791,902	225,833	85,905	5,987	1,109,627
Other softwoods:					
Sound trees	10,942	2,199	1,799	164	15,104
Sound culls	863	312	88	--	1,263
Rotten culls	--	--	58	--	58
Total	11,805	2,511	1,945	164	16,425
Soft-textured hdwds.:					
Sound trees	469,664	86,733	17,918	5,613	579,928
Sound culls	264,151	34,779	5,446	2,411	306,787
Rotten culls	6,234	5,144	1,490	1,074	13,942
Total	740,049	126,656	24,854	9,098	900,657
Hard-textured hdwds.:					
Sound trees	584,662	56,041	9,901	5,055	655,659
Sound culls[2]	610,493	52,998	5,729	2,962	672,182
Rotten culls	6,241	3,551	665	638	11,095
Total	1,201,396	112,590	16,295	8,655	1,338,936
All species	2,745,152	467,590	128,999	23,904	3,365,645

[1] All trees 1.0 inch d.b.h. and larger.

[2] Includes scrub oak and noncommercial trees.

Table 16.--Area[1] of seedling, sapling, and poorly stocked stands by plantability class, 1952

(In thousands of acres)

Forest type	No planting required[2]	Suitable for machine planting	Hand planting required	All classes
Longleaf pine	66.9	6.6	4.6	78.1
Slash pine	20.8	4.4	13.9	39.1
Loblolly pine	730.2	64.8	140.2	935.2
Shortleaf pine	187.9	10.5	19.3	217.7
Oak-pine	292.9	14.1	24.2	331.2
Upland hdwds.	188.7	27.0	15.2	230.9
Scrub oak	52.5	57.3	98.6	208.4
All types	1,539.9	184.7	316.0	2,040.6
Percent	75.5	9.0	15.5	100.0

[1] Acreage of oak-gum-cypress types excluded.

[2] Sufficient seed trees present or area is restocking naturally.

Table 17.--Stocking on commercial forest area by forest type and tree-size class, 1952

(In thousands of acres)

GROWING STOCK OF ALL SIZES

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-99%	Over-stocked 100+%	Total area
Longleaf pine	27.7	98.5	65.7	36.3	44.1	272.3
Slash pine	1.7	25.2	15.7	17.2	2.8	62.6
Loblolly pine	73.3	420.7	379.5	283.6	1,457.3	2,614.4
Shortleaf pine	5.7	103.3	128.5	89.6	468.6	795.7
Pond pine	--	--	--	--	13.2	13.2
Oak-pine	28.4	111.0	73.4	106.9	398.5	718.2
Upland hdwds.	16.7	74.3	100.3	86.8	248.1	526.2
Scrub oak	150.4	53.1	8.4	--	--	211.9
Lowland hdwds.	12.9	151.7	205.6	260.1	814.9	1,445.2
Cypress	1.2	6.7	3.5	3.1	13.3	27.8
All types	318.0	1,044.5	980.6	883.6	3,460.8	6,687.5
Percent	4.8	15.6	14.7	13.2	51.7	100.0

GROWING STOCK 5.0 INCHES DBH AND LARGER

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-99%	Over-stocked 100+%	Total area
Longleaf pine	69.4	169.4	26.1	4.9	2.5	272.3
Slash pine	39.1	9.1	10.9	0.7	2.8	62.6
Loblolly pine	904.7	1,153.1	405.8	117.8	33.0	2,614.4
Shortleaf pine	202.5	457.4	84.7	41.7	9.4	795.7
Pond pine	--	10.7	2.5	--	--	13.2
Oak-pine	312.2	341.7	53.6	10.7	--	718.2
Upland hdwds.	195.7	296.4	25.9	7.1	1.1	526.2
Scrub oak	206.4	5.5	--	--	--	211.9
Lowland hdwds.	273.0	726.5	336.1	85.9	23.7	1,445.2
Cypress	1.2	8.7	15.1	1.3	1.5	27.8
All types	2,204.2	3,178.5	960.7	270.1	74.0	6,687.5
Percent	33.0	47.5	14.4	4.0	1.1	100.0

SAWTIMBER GROWING STOCK

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-99%	Over-stocked 100+%	Total area
Longleaf pine	171.4	86.0	14.2	0.7	--	272.3
Slash pine	51.5	11.1	--	--	--	62.6
Loblolly pine	1,647.2	782.9	155.6	27.1	1.6	2,614.4
Shortleaf pine	487.4	260.2	42.2	5.9	--	795.7
Pond pine	2.5	8.2	2.5	--	--	13.2
Oak-pine	489.0	208.2	19.7	1.3	--	718.2
Upland hdwds.	372.3	139.9	14.0	--	--	526.2
Scrub oak	209.9	2.0	--	--	--	211.9
Lowland hdwds.	627.7	684.1	116.9	15.0	1.5	1,445.2
Cypress	5.0	16.5	4.8	1.5	--	27.8
All types	4,063.9	2,199.1	369.9	51.5	3.1	6,687.5
Percent	60.7	32.9	5.5	0.8	0.1	100.0

Table 18.--Net annual growth of sawtimber by stand-size class and species group, 1952

(In thousand board feet)

Stand-size class	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Sawtimber stands	336,108	5,509	133,987	52,009	527,613
Poletimber stands	272,506	275	65,822	32,303	370,906
Other stands	35,669	75	5,620	3,211	44,575
All stands	644,283	5,859	205,429	87,523	943,094

Table 19.--Net annual growth of growing stock by stand-size class and species group, 1952

(In thousand cords)

Stand-size class	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Sawtimber stands	798	13	567	223	1,601
Poletimber stands	1,262	3	434	265	1,964
Other stands	256	(1/)	44	35	335
All stands	2,316	16	1,045	523	3,900

1/ Less than 500 cords.

Table 20.--Average growth of sawtimber per acre by forest type and stand-size class, 1952

(In board feet)

Forest type	Stand-size class			All stands
	Sawtimber	Poletimber	Other stands	
Longleaf and slash pine	334	92	24	129
Loblolly and pond pine	412	150	18	169
Shortleaf pine	327	166	15	155
Cypress	298	7	--	224
Oak-pine	256	137	24	107
Oak-hickory	224	90	21	80
Lowland hdwds.	286	131	54	173
Scrub oak	--	--	2	2
All types	336	139	23	147

Table 21.--Average growth of growing stock per acre by forest type and stand-size class, 1952

(In standard cords)

Forest type	Stand-size class			All stands
	Sawtimber	Poletimber	Other stands	
Longleaf and slash pine	0.9	0.6	0.2	0.5
Loblolly and pond pine	1.2	0.9	0.2	0.7
Shortleaf pine	0.9	0.8	0.1	0.6
Cypress	1.0	0.1	--	0.8
Oak-pine	0.9	0.7	0.1	0.5
Oak-hickory	0.7	0.4	0.1	0.3
Lowland hdwds.	1.1	0.9	0.2	0.8
Scrub oak	--	--	(1/)	(1/)
All types	1.1	0.8	0.2	0.6

1/ Less than 0.05 cords per acre.

Table 22.--Annual net growth percentages[1] for sawtimber volumes by stand-size class and species group, 1952

Stand-size class	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Sawtimber stands	10.48	4.17	7.01	4.67	8.29
Poletimber stands	21.07	4.94	11.64	7.77	16.27
Other stands	10.29	3.29	4.36	3.34	7.77
All stands	13.30	4.18	7.88	5.39	10.23

[1] For use with board-foot volumes.

Table 23.--Annual net growth percentages[1] for growing stock volumes by stand-size class and species group, 1952

Stand-size class	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Sawtimber stands	6.85	3.13	6.73	5.13	6.45
Poletimber stands	12.77	5.65	10.45	8.74	11.48
Other stands	14.58	1.67	6.28	7.19	11.27
All stands	9.77	3.33	7.84	6.60	8.58

[1] For use with volumes in cubic feet or standard cords.

Table 24.--Average annual drain on sawtimber by tree-size class and species group

(In thousand board feet)

Tree-size class	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Small sawtimber	499,307	1,120	36,615	4,338	541,380
Large sawtimber	287,642	--	135,113	50,402	473,157
All trees	786,949	1,120	171,728	54,740	1,014,537

Table 25.--Average annual drain on growing stock by tree-size class and species group

(In thousand cords)

Tree-size class	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Pole trees	303	--	51	27	381
Small sawtimber	1,479	3	108	15	1,605
Large sawtimber	688	--	339	128	1,155
All trees	2,470	3	498	170	3,141

Table 26.--Net change in sawtimber volume by species group, 1952

(In thousand board feet)

Item	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Net volume, Jan. 1, 1952	4,845,632	140,072	2,606,229	1,624,561	9,216,494
Total growth	669,544	7,442	213,830	101,793	992,609
Mortality	25,261	1,583	8,401	14,270	49,515
Net growth	644,283	5,859	205,429	87,523	943,094
Drain	786,949	1,120	171,728	54,740	1,014,537
Loss or gain	-142,666	+4,739	+33,701	+32,783	-71,443
Net volume, Jan. 1, 1953	4,702,966	144,811	2,639,930	1,657,344	9,145,051
Percent change	- 2.94	+ 3.38	+ 1.29	+ 2.02	- 0.78

Table 27.--Net change in growing stock by species group, 1952

(In thousand cords)

Item	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Growing stock, Jan. 1, 1952	24,168	490	13,180	7,739	45,577
Total growth	2,430	21	1,091	607	4,149
Mortality	114	5	46	84	249
Net growth	2,316	16	1,045	523	3,900
Drain	2,470	3	498	170	3,141
Loss or gain	-154	+13	+547	+353	+759
Growing stock, Jan. 1, 1953	24,014	503	13,727	8,092	46,336
Percent change	-0.64	+2.65	+4.15	+4.56	+1.67

Table 28.--County area by broad use class, 1952

County	Total area[1]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Baldwin	169.6	64.0	3.1	--	102.5	61.6
Bibb	162.6	66.8	3.0	--	92.8	58.1
Bleckley	140.2	76.4	0.2	--	63.6	45.4
Burke	532.5	280.8	2.1	--	249.6	47.1
Butts	120.3	50.4	2.3	--	67.6	57.3
Calhoun	185.0	90.7	0.2	--	94.1	50.9
Chattahoochee	161.9	31.8	1.3	--	128.8	80.2
Clay	143.4	69.5	0.6	--	73.3	51.3
Columbia	197.1	46.1	11.8	--	139.2	75.1
Crawford	201.6	54.8	1.5	--	145.3	72.6
Dougherty	210.6	116.3	8.0	--	86.3	42.6
Glascock	91.5	40.8	0.7	--	50.0	55.1
Greene	258.5	61.1	0.8	--	196.6	76.3
Hancock	310.4	80.4	0.6	--	229.4	74.0
Harris	302.7	49.1	6.6	--	247.0	83.4
Houston	243.2	119.3	1.8	--	122.1	50.6
Jasper	240.0	59.3	1.8	--	178.9	75.1
Jefferson	340.5	172.9	0.1	--	167.5	49.2
Jones	257.3	47.0	0.8	--	209.5	81.7
Lamar	115.8	46.8	--	--	69.0	59.6
Lee	229.1	133.9	6.0	--	89.2	40.0
Lincoln	163.2	36.5	34.4	--	92.3	71.7
McDuffie	168.3	60.9	4.1	--	103.3	62.9
Macon	257.9	118.4	4.6	--	134.9	53.3
Marion	233.6	58.2	0.1	--	175.3	75.1
Monroe	255.4	47.8	1.0	--	206.6	81.2
Morgan	227.8	97.6	0.1	--	130.1	57.1
Muscogee	142.1	46.0	3.7	--	92.4	66.8
Peach	96.6	58.9	0.1	--	37.6	39.0
Pike	147.2	78.9	0.1	--	68.2	46.4
Pulaski	162.6	88.2	0.8	--	73.6	45.5
Putnam	224.0	32.9	6.6	--	184.5	84.9
Quitman	109.4	29.3	1.1	--	79.0	72.9
Randolph	279.0	132.5	0.3	--	146.2	52.5
Richmond	208.6	83.9	4.2	2.2	118.3	57.9
Schley	103.7	39.3	--	--	64.4	62.1
Stewart	296.3	87.8	0.6	--	207.9	70.3
Sumter	314.9	174.3	2.5	--	138.1	44.2
Talbot	249.6	36.3	1.0	--	212.3	85.4
Taliaferro	124.8	25.0	--	--	99.8	80.0
Taylor	257.9	87.5	2.4	--	168.0	65.8
Terrell	210.6	136.8	1.3	--	72.5	34.6
Twiggs	233.6	52.8	1.2	--	179.6	77.3
Upson	213.8	57.8	1.9	--	154.1	72.7
Warren	187.7	66.4	0.1	--	121.2	64.6
Washington	431.4	156.9	0.9	--	273.6	63.6
Webster	124.8	32.5	--	--	92.3	74.0
Wilkes	302.1	72.9	1.7	--	227.5	75.7
Wilkinson	293.1	61.0	0.5	--	231.6	79.2
Unit total	10,633.8	3,815.5	128.6	2.2	6,687.5	63.7

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[1] Gross area from Bureau of the Census, 1950.

Table 29.--Ownership of commercial forest land by county, 1952

County	Private		Public					
			National forest	Other federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Baldwin	97.9	95.5	--	--	4.6	--	4.6	4.5
Bibb	92.4	99.6	--	--	--	0.4	0.4	0.4
Bleckley	63.5	99.8	--	--	0.1	(1/)	0.1	0.2
Burke	249.5	100.0	--	--	0.1	(1/)	0.1	(2/)
Butts	67.0	99.1	--	--	0.6	(1/)	0.6	0.9
Calhoun	94.1	100.0	--	--	--	(1/)	(1/)	(2/)
Chattahoochee	92.7	72.0	--	35.7	--	0.4	36.1	28.0
Clay	73.3	100.0	--	--	--	--	--	--
Columbia	131.9	94.8	--	7.3	--	(1/)	7.3	5.2
Crawford	145.2	99.9	--	--	--	0.1	0.1	0.1
Dougherty	84.4	97.8	--	0.5	1.4	(1/)	1.9	2.2
Glascock	50.0	100.0	--	--	--	--	--	--
Greene	175.1	89.1	--	21.0	0.5	(1/)	21.5	10.9
Hancock	229.4	100.0	--	--	--	(1/)	(1/)	(2/)
Harris	241.0	97.6	--	--	5.9	0.1	6.0	2.4
Houston	119.0	97.5	--	3.1	--	(1/)	3.1	2.5
Jasper	153.9	86.0	--	25.0	--	(1/)	25.0	14.0
Jefferson	164.8	98.4	--	2.7	--	--	2.7	1.6
Jones	168.0	80.2	4.6	36.7	--	0.2	41.5	19.8
Lamar	68.9	99.9	--	--	--	0.1	0.1	0.1
Lee	88.8	99.6	--	0.1	0.3	--	0.4	0.4
Lincoln	72.5	78.5	--	19.8	--	--	19.8	21.5
McDuffie	89.4	86.5	--	13.9	--	--	13.9	13.5
Macon	134.7	99.9	--	--	--	0.2	0.2	0.1
Marion	174.9	99.8	--	0.4	--	(1/)	0.4	0.2
Monroe	206.6	100.0	--	--	--	(1/)	(1/)	(2/)
Morgan	124.4	95.6	--	0.3	5.3	0.1	5.7	4.4
Muscogee	15.2	16.5	--	77.2	--	--	77.2	83.5
Peach	37.5	99.7	--	--	0.1	(1/)	0.1	0.3
Pike	68.0	99.7	--	--	--	0.2	0.2	0.3
Pulaski	73.6	100.0	--	--	--	--	--	--
Putnam	140.4	76.1	--	30.2	13.8	0.1	44.1	23.9
Quitman	79.0	100.0	--	--	--	(1/)	(1/)	(2/)
Randolph	146.1	99.9	--	--	--	0.1	0.1	0.1
Richmond	84.8	71.7	--	32.3	1.2	(1/)	33.5	28.3
Schley	64.4	100.0	--	--	--	--	--	--
Stewart	207.8	100.0	--	--	--	0.1	0.1	(2/)
Sumter	137.8	99.8	--	0.1	(1/)	[illegible]	0.3	0.2
Talbot	212.3	100.0	--	--	--	--	--	--
Taliaferro	98.9	99.1	--	--	0.9	--	0.9	0.9
Taylor	167.9	99.9	--	--	--	0.1	0.1	0.1
Terrell	72.4	99.9	--	--	--	0.1	0.1	0.1
Twiggs	179.4	99.9	--	--	--	0.2	0.2	0.1
Upson	153.9	99.9	--	--	--	0.2	0.2	0.1
Warren	121.1	99.9	--	0.1	--	(1/)	0.1	0.1
Washington	273.5	100.0	--	--	--	0.1	0.1	(2/)
Webster	92.3	100.0	--	--	--	--	--	--
Wilkes	222.4	97.8	--	5.1	--	(1/)	5.1	2.2
Wilkinson	231.3	99.9	--	--	(1/)	0.3	0.3	0.1
Unit total	6,333.3	94.7	4.6	311.5	34.8	3.3	354.2	5.3

1/ Less than 50 acres.

2/ Less than 0.05 percent.

Table 30.--Net volume[1] of sawtimber by county and species group, 1952

(In million board feet)

County	Softwoods[2]	Gum, maple and yellow-poplar[3]	Other hardwoods	All species
Baldwin	83.6	13.5	16.5	113.6
Bibb	71.7	32.8	27.8	132.3
Bleckley	37.7	29.1	27.0	93.8
Burke	173.4	191.4	54.6	419.4
Butts	67.6	38.0	18.2	123.8
Calhoun	41.2	47.8	26.4	115.4
Chattahoochee	254.9	32.0	19.7	306.6
Clay	27.7	14.8	20.7	63.2
Columbia	94.9	24.3	32.3	151.5
Crawford	124.9	30.1	26.2	181.2
Dougherty	95.3	32.5	69.6	197.4
Glascock	29.0	20.3	13.3	62.6
Greene	133.7	46.3	36.5	216.5
Hancock	121.9	87.7	20.2	229.8
Harris	199.7	31.4	25.6	256.7
Houston	102.9	141.4	86.1	330.4
Jasper	231.8	61.3	39.9	333.0
Jefferson	77.4	121.1	73.6	272.1
Jones	296.0	32.0	30.7	358.7
Lamar	48.5	8.9	8.4	65.8
Lee	46.7	25.8	24.3	96.8
Lincoln	38.5	12.7	11.6	62.8
McDuffie	48.6	59.8	5.7	114.1
Macon	74.8	150.1	68.3	293.2
Marion	58.2	69.6	29.0	156.8
Monroe	95.8	32.7	32.0	160.5
Morgan	105.2	78.0	20.4	203.6
Muscogee	148.5	22.3	8.7	179.5
Peach	36.4	19.2	10.9	66.5
Pike	31.3	22.0	5.3	58.6
Pulaski	75.6	36.3	21.4	133.3
Putnam	230.5	35.1	22.2	287.8
Quitman	39.4	13.0	13.2	65.6
Randolph	49.7	93.3	22.3	165.3
Richmond	69.7	66.7	26.8	163.2
Schley	20.9	28.1	11.8	60.8
Stewart	246.1	58.5	59.4	364.0
Sumter	43.9	119.4	39.0	202.3
Talbot	97.5	17.8	7.4	122.7
Taliaferro	49.5	23.1	5.7	78.3
Taylor	53.3	55.4	28.0	136.7
Terrell	40.9	62.2	16.4	119.5
Twiggs	196.5	56.0	49.9	302.4
Upson	90.7	17.2	54.3	162.2
Warren	58.9	40.6	17.1	116.6
Washington	162.0	110.0	76.2	348.2
Webster	35.3	38.8	27.4	101.5
Wilkes	253.5	35.6	46.2	335.3
Wilkinson	174.0	170.2	190.4	534.6
Unit total	4,985.7	2,606.2	1,624.6	9,216.5

[1] Log scale, International 1/4-inch rule.

[2] Includes pine, cypress, and cedar.

[3] Includes other soft-textured hardwoods.

Table 31.--Net volume[1] of sawtimber by county, broad species group, and diameter-class group, 1952

County	Softwoods		Hardwoods		Softwoods	Hardwoods
	9-14 inches	15+ inches	11-14 inches	15+ inches		
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent	Percent
Baldwin	70.2	13.4	16.6	13.4	73.6	26.4
Bibb	50.2	21.5	26.8	33.8	54.2	45.8
Bleckley	27.9	9.8	22.3	33.8	40.2	59.8
Burke	117.8	55.6	119.7	126.3	41.3	58.7
Butts	58.0	9.6	17.9	38.3	54.6	45.4
Calhoun	31.1	10.1	32.3	41.9	35.7	64.3
Chattahoochee	144.1	110.8	30.0	21.7	83.1	16.9
Clay	26.7	1.0	19.0	16.5	43.8	56.2
Columbia	75.6	19.3	20.8	35.8	62.6	37.4
Crawford	103.5	21.4	28.7	27.6	68.9	31.1
Dougherty	69.9	25.4	29.6	72.5	48.3	51.7
Glascock	19.3	9.7	17.3	16.3	46.3	53.7
Greene	133.7	--	44.7	38.1	61.8	38.2
Hancock	119.4	2.5	69.9	38.0	53.0	47.0
Harris	170.4	29.3	34.3	22.7	77.8	22.2
Houston	62.5	40.4	77.6	149.9	31.1	68.9
Jasper	198.0	33.8	39.9	61.3	69.6	30.4
Jefferson	72.0	5.4	98.9	95.8	28.4	71.6
Jones	228.3	67.7	34.1	28.6	82.5	17.5
Lamar	43.4	5.1	10.5	6.8	73.7	26.3
Lee	39.2	7.5	25.5	24.6	48.2	51.8
Lincoln	30.5	8.0	12.3	12.0	61.3	38.7
McDuffie	41.7	6.9	30.7	34.8	42.6	57.4
Macon	40.5	34.3	92.5	125.9	25.5	74.5
Marion	56.4	1.8	49.1	49.5	37.1	62.9
Monroe	89.0	6.8	27.8	36.9	59.7	40.3
Morgan	99.6	5.6	32.7	65.7	51.7	48.3
Muscogee	78.0	70.5	15.0	16.0	82.7	17.3
Peach	27.7	8.7	13.8	16.3	54.7	45.3
Pike	27.2	4.1	20.0	7.3	53.4	46.6
Pulaski	48.7	26.9	26.3	31.4	56.7	43.3
Putnam	185.8	44.7	40.2	17.1	80.1	19.9
Quitman	35.9	3.5	15.0	11.2	60.1	39.9
Randolph	49.7	--	72.9	42.7	30.1	69.9
Richmond	55.9	13.8	39.9	53.6	42.7	57.3
Schley	20.0	0.9	13.7	26.2	34.4	65.6
Stewart	208.2	37.9	56.1	61.8	67.6	32.4
Sumter	31.1	12.8	58.5	99.9	21.7	78.3
Talbot	89.7	7.8	20.8	4.4	79.5	20.5
Taliaferro	41.5	8.0	14.8	14.0	63.2	36.8
Taylor	48.4	4.9	45.1	38.3	39.0	61.0
Terrell	27.1	13.8	39.0	39.6	34.2	65.8
Twiggs	153.0	43.5	61.1	44.8	65.0	35.0
Upson	72.0	18.7	26.5	45.0	55.9	44.1
Warren	49.6	9.3	28.1	29.6	50.5	49.5
Washington	132.8	29.2	93.9	92.3	46.5	53.5
Webster	28.9	6.4	38.1	28.1	34.8	65.2
Wilkes	221.0	32.5	50.0	31.8	75.6	24.4
Wilkinson	127.1	46.9	152.5	208.1	32.5	67.5
Unit total	3,978.2	1,007.5	2,002.8	2,228.0	54.1	45.9

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[1] Log scale, International 1/4-inch rule.

Table 32.--Net volume[1] of all timber by county, pulping species group, and tree-diameter group, 1952

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft-text. hdwds.		Hard-text. hdwds.		All species
	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	
Baldwin	303	97	--	--	89	22	59	32	602
Bibb	263	102	--	--	93	60	86	64	668
Bleckley	93	32	--	2	158	61	41	61	448
Burke	271	234	28	42	561	404	102	124	1,766
Butts	318	63	--	--	90	89	67	35	662
Calhoun	91	44	11	7	174	89	68	56	540
Chattahoochee	376	407	--	--	164	55	48	47	1,097
Clay	141	11	--	--	61	27	47	47	334
Columbia	516	106	--	--	60	49	113	81	925
Crawford	429	109	--	--	100	53	36	60	787
Dougherty	169	90	93	29	47	71	77	152	728
Glascock	99	40	--	--	79	39	58	27	342
Greene	672	55	--	--	160	88	90	65	1,130
Hancock	681	51	--	--	240	176	151	35	1,334
Harris	899	158	--	4	209	53	85	48	1,456
Houston	219	145	15	23	301	297	100	196	1,296
Jasper	863	234	4	--	254	129	148	83	1,715
Jefferson	251	51	21	16	424	200	125	163	1,251
Jones	973	361	--	--	103	46	24	78	1,585
Lamar	271	46	--	--	71	15	43	17	463
Lee	168	57	4	2	69	57	56	64	477
Lincoln	323	26	--	--	31	26	33	18	457
McDuffie	362	33	--	--	155	126	31	8	715
Macon	241	119	--	--	221	311	99	152	1,143
Marion	352	23	--	--	207	122	59	73	836
Monroe	758	53	--	--	159	68	94	76	1,208
Morgan	550	63	--	--	195	162	131	46	1,147
Muscogee	256	234	--	--	134	39	56	20	739
Peach	117	44	--	--	77	35	33	27	333
Pike	171	25	2	--	49	42	12	8	309
Pulaski	117	103	3	18	70	73	34	43	461
Putnam	888	241	--	--	110	56	78	43	1,416
Quitman	173	31	--	--	73	18	56	26	377
Randolph	233	24	--	--	346	191	45	50	889
Richmond	194	75	9	15	172	144	69	65	743
Schley	231	12	--	2	95	64	30	22	456
Stewart	805	259	--	--	232	108	141	119	1,664
Sumter	173	47	--	5	202	276	99	75	877
Talbot	550	68	--	--	55	35	107	10	825
Taliaferro	408	34	--	--	88	38	49	8	625
Taylor	357	30	--	--	200	103	94	52	836
Terrell	57	45	34	12	296	115	31	43	633
Twiggs	511	191	--	--	132	114	217	95	1,260
Upson	372	96	--	--	93	23	74	128	786
Warren	261	37	--	--	122	74	81	40	615
Washington	540	169	3	--	232	199	206	168	1,517
Webster	134	30	--	--	142	69	63	56	494
Wilkes	1,548	181	--	--	263	57	230	99	2,378
Wilkinson	467	167	68	18	418	336	323	435	2,232
Unit total	19,215	4,953	295	195	8,076	5,104	4,199	3,540	45,577

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[1] Sound wood and bark.

Table 32.--Net volume[1] of all timber by county, pulping species group, and tree-diameter group, 1952 (cont'd.)

(In thousand cords)

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft-text. hdwds.		Hard-text. hdwds.		All species
	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	
Baldwin	40	24	--	--	13	12	28	14	131
Bibb	20	4	--	--	40	40	34	27	165
Bleckley	17	6	1	--	84	43	49	62	262
Burke	47	80	--	--	198	305	99	171	900
Butts	24	5	--	--	6	25	7	10	77
Calhoun	3	2	--	--	75	76	35	126	317
Chattahoochee	81	98	--	--	69	33	31	18	330
Clay	18	9	--	2	19	20	54	65	187
Columbia	110	27	--	--	34	28	78	28	305
Crawford	42	25	--	--	39	58	65	57	286
Dougherty	25	20	8	--	24	48	44	155	324
Glascock	4	3	--	--	33	21	49	22	132
Greene	123	4	--	--	68	82	89	59	425
Hancock	82	9	--	--	55	69	54	38	307
Harris	199	68	--	--	115	96	204	125	807
Houston	11	6	--	--	154	141	47	104	463
Jasper	87	54	--	1	22	39	84	42	329
Jefferson	51	30	8	--	138	194	149	146	716
Jones	119	68	--	--	62	34	30	59	372
Lamar	58	23	--	--	36	17	27	16	177
Lee	11	4	1	2	47	127	59	92	343
Lincoln	35	9	--	--	8	22	85	23	182
McDuffie	54	13	--	--	49	62	10	21	209
Macon	29	22	--	--	45	98	34	68	296
Marion	56	14	--	--	89	100	176	65	500
Monroe	131	43	--	--	36	64	59	37	370
Morgan	47	13	--	--	80	78	42	33	293
Muscogee	20	18	--	--	55	27	25	41	186
Peach	5	6	--	--	15	12	8	5	51
Pike	62	20	--	--	29	40	30	13	194
Pulaski	5	28	--	--	37	94	15	78	257
Putnam	260	87	--	4	46	16	59	[illegible]	[illegible]
Quitman	36	16	--	--	25	17	[illegible]	[illegible]	[illegible]
Randolph	58	46	--	--	104	[illegible]	[illegible]	[illegible]	[illegible]
Richmond	33	9	--	--	99	[illegible]	[illegible]	[illegible]	[illegible]
Schley	20	16	--	--	19	[illegible]	[illegible]	[illegible]	[illegible]
Stewart	47	38	--	--	48	117	[illegible]	[illegible]	444
Sumter	9	--	--	--	31	106	34	44	224
Talbot	144	33	--	5	72	76	77	33	440
Taliaferro	54	6	--	--	19	19	35	16	149
Taylor	20	4	--	--	60	77	113	66	340
Terrell	26	6	2	--	67	73	77	58	309
Twiggs	59	29	--	--	67	165	60	117	497
Upson	73	33	--	--	86	25	90	54	361
Warren	26	8	--	--	54	57	64	31	240
Washington	154	23	--	--	245	232	121	206	981
Webster	36	9	--	--	51	49	56	73	274
Wilkes	169	24	--	--	44	56	44	128	465
Wilkinson	62	20	3	--	123	183	124	308	823
Unit total	2,902	1,162	23	14	3,034	3,666	3,031	3,283	17,115

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[1] Sound wood and bark.

Table 33.--Average annual sawtimber drain by county and species group[1]

(In thousand board feet)

County	Pine	Other softwoods	Soft-textured hardwoods	Hard-textured hardwoods	All species
Baldwin	9,641	--	97	106	9,844
Bibb	14,895	--	304	640	15,839
Bleckley	3,610	--	2,582	1,251	7,443
Burke	16,600	--	541	189	17,330
Butts	15,779	--	304	--	16,083
Calhoun	15,815	--	6,588	706	23.109
Chattahoochee	1,811	--	116	--	1,927
Clay	8,451	--	1,088	3,975	13.514
Columbia	16,425	--	3,163	--	19,588
Crawford	15,273	--	--	385	15,658
Dougherty	3,824	--	912	4,146	8,882
Glascock	3,982	--	4,319	130	8,431
Greene	39,407	--	4,776	--	44,183
Hancock	26,197	--	1,805	--	28,002
Harris	40,861	--	1,579	--	42,440
Houston	9,353	427	1,019	3,190	13,989
Jasper	29,882	--	--	3,092	32,974
Jefferson	21,215	--	6,425	--	27,640
Jones	23,253	--	3,606	1,798	28,657
Lamar	12,628	--	4,079	1,307	18,014
Lee	2,637	--	2,038	2,137	6,812
Lincoln	12,572	--	273	--	12,845
McDuffie	7,750	--	3,419	--	11,169
Macon	10,136	--	2,757	--	12,893
Marion	19,120	--	953	128	20,201
Monroe	12,233	--	1,680	--	13,913
Morgan	54,951	--	3,124	320	58,395
Muscogee	9,661	--	275	96	10,032
Peach	4,205	--	445	98	4,748
Pike	20,904	--	9,593	782	31,279
Pulaski	7,511	--	5,639	--	13,150
Putnam	8,439	--	586	204	9,229
Quitman	10,063	--	1,862	3,365	15,290
Randolph	9,718	--	13,274	1,133	24,125
Richmond	4,761	241	4,831	1,269	11,102
Schley	10,580	--	--	--	10,580
Stewart	15,670	--	1,267	--	16,937
Sumter	22,952	--	2,353	--	25,305
Talbot	21,013	--	9,816	--	30,829
Taliaferro	12,394	--	--	173	12,567
Taylor	9,448	--	13,877	2,173	25,498
Terrell	3,097	--	7,350	--	10,447
Twiggs	41,780	452	2,956	1,497	46,685
Upson	10,111	--	2,197	--	12,308
Warren	19,836	--	6,994	--	26,830
Washington	38,861	--	13,536	3,608	56,005
Webster	5,501	--	4,375	872	10,748
Wilkes	42,081	--	10,591	--	52,672
Wilkinson	10,062	--	2,364	15,970	28,396
Unit total	786,949	1,120	171,728	54,740	1,014,537

---

[1] Estimates of timber drain by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 34.--Average annual drain on growing stock by county and species group[1]

(In thousand cords)

County	Pine	Other softwoods	Soft-textured hardwoods	Hard-textured hardwoods	All species
Baldwin	32	--	1	1	34
Bibb	46	--	1	3	50
Bleckley	10	--	9	4	23
Burke	45	--	5	3	53
Butts	46	--	1	--	47
Calhoun	47	--	19	2	68
Chattahoochee	5	--	1	--	6
Clay	23	--	3	11	37
Columbia	45	--	9	1	55
Crawford	47	--	--	1	48
Dougherty	16	--	2	13	31
Glascock	14	--	11	--	25
Greene	131	--	15	--	146
Hancock	87	--	11	2	100
Harris	139	--	4	3	146
Houston	22	1	3	8	34
Jasper	105	--	--	8	113
Jefferson	58	--	17	--	75
Jones	94	--	18	8	120
Lamar	37	--	11	6	54
Lee	7	--	5	6	18
Lincoln	47	--	1	--	48
McDuffie	26	--	9	--	35
Macon	30	--	7	--	37
Marion	52	--	5	2	59
Monroe	37	--	5	--	42
Morgan	177	--	8	2	187
Muscogee	34	--	3	1	38
Peach	11	--	1	--	12
Pike	58	--	26	4	88
Pulaski	19	--	14	--	33
Putnam	27	--	5	3	35
Quitman	26	--	6	9	41
Randolph	25	--	36	3	64
Richmond	20	1	13	3	37
Schley	36	--	--	--	36
Stewart	50	--	4	--	54
Sumter	62	--	7	--	69
Talbot	71	--	38	1	110
Taliaferro	60	--	--	1	61
Taylor	32	--	33	5	70
Terrell	8	--	19	--	27
Twiggs	115	1	8	4	128
Upson	33	--	7	--	40
Warren	67	--	18	--	85
Washington	106	--	35	10	151
Webster	16	--	11	2	29
Wilkes	139	--	26	--	165
Wilkinson	30	--	7	40	77
Unit total	2,470	3	498	170	3,141

[1] Estimates of timber drain by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.

Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, and (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land in any of the following classes:

Active agriculture: Land under cultivation or in pasture including farm yards and work lots.

Pasture: Land under fence used primarily for grazing purposes where the timber has been cleared to less than 10-percent stocking and a real attempt to produce a sod has been made.

Idle agriculture: Land previously cultivated or pastured but now idle or abandoned and having less than a 10-percent stocking of forest trees.

Marsh: Low, wet areas characterized by a heavy growth of grass and reeds and an absence of timber.

Urban and other areas: Includes towns, residential and industrial suburban areas, school yards, cemeteries, roads, railroads, power lines, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems are the criteria.

Pine types: Forests in which 50 percent or more of the stand is in pine species. Plurality of volume or number of trees is used to determine the specific type.

Oak-pine type: Forests in which 50 percent or more of the stand is hardwood, usually upland oaks, but in which southern yellow pines make up 25-49 percent of the stand.

Oak-hickory type

Upland hardwood: Forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, maple, gum, and other hardwoods, except where pines comprise 25-49 percent of the stand.

Scrub oak: Upland forests in which 50 percent or more of the stand is composed of scrub oak species, except where pines comprise 25-49 percent of the stand.

Oak-gum-cypress type

Lowland hardwood: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, oak, elm, maple, and associated species, except where pines comprise 25-49 percent of the stand.

Cypress: Bottomland forests in which 50 percent or more of the stand is cypress, except where pines comprise 25-49 percent of the stand.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board feet net volume per acre, 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or less of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10-percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated mid-point, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound sawtimber.

Poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size.

Sapling-size trees: Trees 1.0 inch to 4.9 inches d.b.h. which will grow into poletimber or sawtimber size trees of sound quality.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for sawlogs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for sawlogs now or prospectively because of rotten defect.

Hardwood limbs: The limb volume of all hardwood sawtimber and cull trees to a minimum diameter of 4.0 inches inside bark.

Species Groups

Yellow pines: Includes longleaf, slash, loblolly, pond, and shortleaf pine.

Other softwoods: Pondcypress, baldcypress, eastern redcedar, and Atlantic whitecedar.

Soft-textured hardwoods: Black and tupelo gum, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, magnolia, sweetbay, and willow.

Hard-textured hardwoods: All of the oaks, hickories, ash, beech, elm, river birch, hackberry, sycamore, black locust, mulberry, black walnut, holly, dogwood, and persimmon.

Volume Estimates

Board-foot volume: The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of all sawtimber size hardwoods is shown separately.

Volume in cubic feet: Same as volume shown in cords except bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 73 cubic feet of solid wood.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combinations of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

Growth and Drain

Net growth.--The estimated volume of net growth includes the growth on the present growing stock plus the ingrowth accrual resulting from smaller trees reaching volume size. It excludes mortality, or loss of volume in trees dying from natural causes. Net growth estimates are based on the volume or number of sound trees. Other material is not included.

In board feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.

In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches and larger resulting from growth, ingrowth, and mortality losses.

Timber drain.--The volume of timber drain is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past three-year period are recorded and the measurements are converted into equivalent tree volume. The average volume of drain for the three-year period is then taken as the annual estimate. Board-foot drain volumes include the sawlog portion of all sawtimber size trees which were cut. Drain in cubic feet or cords includes the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger.

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) nonsampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The nonsampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest area.--The sampling intensity of the 1952 survey was sufficient to provide an estimate of the total forest acreage in the Unit with a standard error of ±0.4 percent. The probabilities are two out of three that the estimated forest acreage is within ±0.4 percent of the actual acreage.

Cubic volume.--The standard error of the 1952 net cubic-foot volume in the Unit was ±2.0 percent. Here again, the probabilities are two out of three that the estimated volume does not vary from the actual volume by more than this percentage. The standard error of the volume in cords was not computed but it should be approximately the same.

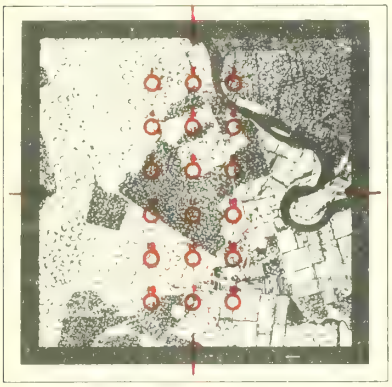
Board-foot volume.--The standard error of the 1952 estimate of board-foot volume in the Unit was ±2.3 percent.

Use of county data.--The tables showing area and timber volumes by county are included to permit grouping of the data in any desired combinations. The survey was designed so that the number of sample plots taken in each county would provide an estimate of the timber volume in cubic feet which would not exceed ±15 percent. The actual range of error of the cubic volume estimates by county is from ±11.2 percent to ±14.9 percent. The errors of board-foot volume estimates by county range from ±11.5 percent to ±18.0 percent, and of forest area from ±5.6 percent to ±12.0 percent.

In spite of the accuracy limit set on volume estimates by county, comparison of individual county statistics may be subject to considerable error and should be avoided. Grouping the data for a number of counties will increase the reliability and make the combined estimates sufficiently accurate for general use. For example, grouping the growing stock volume data for four counties with errors ranging from 11 to 15 percent resulted in a total volume estimate with only 7 percent error.

HOW THE FOREST INVENTORY IS MADE

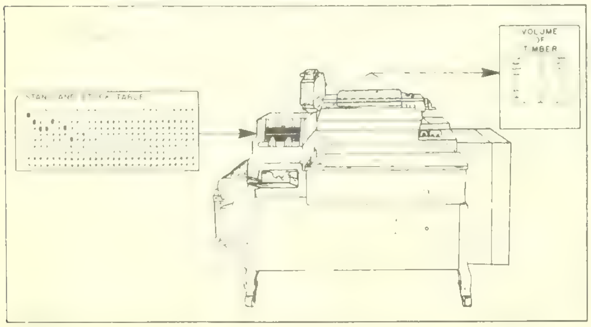
The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:



1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.

2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, and mortality. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.

3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber drain is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia

No. 22 - Southern Forests as a Source of Pulpwood

No. 23 - 1946 Pulpwood Production by County in the Southeast

No. 24 - Southern Pulpwood Production and the Timber Supply

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina

No. 26 - 1946 Commodity Drain by County from South Carolina Forests

No. 27 - 1947 Pulpwood Production by County in the Southeast

No. 28 - South Carolina's Forest Resources, 1947

No. 29 - 1948 Pulpwood Production by County in the Southeast

No. 30 - Forest Resources of Northeast Florida, 1949

No. 31 - Forest Resources of Central Florida 1949

No. 32 - Forest Resources of Northwest Florida, 1949

No. 33 - Forest Resources of South Florida, 1949

No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948

No. 36 - Forest Statistics for Florida, 1949

No. 37 - Forest Statistics for Southwest Georgia, 1951

No. 38 - 1951 Pulpwood Production in the South

No. 39 - Forest Statistics for Southeast Georgia, 1952

OTHER BULLETINS

Pulpwood Production in the South, 1950. Forest Survey Release No. 69

1952 Pulpwood Production in the South. Forest Survey Release No. 72

Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681

The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3

The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6

Agriculture--Asheville

13.63/7: 41

FOREST SURVEY RELEASE NO. 41 SEPTEMBER 1953

FOREST STATISTICS FOR THE SOUTHERN COASTAL PLAIN OF NORTH CAROLINA, 1952

by

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U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
SOUTHEASTERN FOREST EXPERIMENT STATION
ASHEVILLE, NORTH CAROLINA
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In cooperation with the
NORTH CAROLINA
DEPARTMENT OF CONSERVATION AND DEVELOPMENT
DIVISION OF FORESTRY
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FOREWORD

Through the McSweeney-McNary Act of 1928, Congress authorized the Secretary of Agriculture to conduct a comprehensive survey of the forest resources of the United States. The Forest Survey was organized by the Forest Service to carry out the provisions of the Act through the Regional Forest Experiment Stations. In the Southeastern states the Forest Survey is an activity of the Division of Forest Economics of the Southeastern Forest Experiment Station, Asheville, North Carolina.

The five-fold purpose of the Forest Survey is (1) to make a field inventory of the present supply of standing timber, (2) to ascertain the rate at which this supply is being increased through growth, (3) to determine the rate at which it is being reduced through industrial and domestic uses, fire, and other causes, (4) to determine the present consumption and the probable future trend in requirements for forest products, and (5) to interpret and correlate these finds to aid in the formulation of private and public policies regarding forest land management.

The forest resources of the State of North Carolina were originally inventoried by the Forest Survey during the period 1937-38, and these findings have been published. Since that time rapid changes have taken place in the growing stock as the result of timber cutting, forest growth, changes in land use, and better management practices. These changes can be accurately measured only by on-the-ground surveys. A resurvey of the forest resources in the Southern Coastal Plain of North Carolina was started in December 1951 and completed in November 1952. This progress report presents resurvey statistics on forest area, timber volume, growth, and drain for this area, which is designated Survey Unit No. 1.

ACKNOWLEDGMENTS

The Southeastern Station gratefully acknowledges the cooperation of the Department of Conservation and Development and Fred H. Claridge, State Forester, for providing personnel and equipment for field crews to conduct the survey.

The Division of Forest Economics at the Southeastern Station is under the direction of James W. Cruikshank. Field inventory work was under the supervision of Robert W. Larson, and photo interpretation was done by R. C. Aldrich. Office compilation of the data was under the direction of Agnes Nichols, assisted by Louise Shuford, Sammy Wenningham, and Eunice Gamble.

CONTENTS

Page

1952 HIGHLIGHTS AND SIGNIFICANT CHANGES - - - - 1

TABLES FOR THE SURVEY UNIT, 1952

AREA
1. Gross area by broad use class - - - - 8
2. Ownership of commercial forest land - - - - 9
3. Commercial forest area by forest type and stand-size class - - - - 10

NET VOLUME OF SAWTIMBER
4. By species and stand-size class - - - - 11
5. By species and diameter class - - - - 12
6. By forest type and stand-size class - - - - 13
7. By species group, log grade, and tree-size class - - - - 14

NET VOLUME OF ALL TIMBER (in thousand cords)
8. By species and stand-size class - - - - 15
9. By species and diameter class - - - - 16
10. By species and class of material - - - - 17
11. By forest type and stand-size class - - - - 18

NET VOLUME OF ALL TIMBER (in million cubic feet)
12. By species and diameter class - - - - 19
13. By species and class of material - - - - 20

AVERAGE VOLUME PER ACRE
14. Of sawtimber by forest type, species group, and stand-size class - - - - 21
15. Of all trees by forest type, species group, and stand-size class - - - - 22

GENERAL
16. Number of trees by species group, quality class, and tree size - - - - 23
17. Area of seedling, sapling, and poorly stocked stands by plantability class - - - - 24
18. Stocking on commercial forest area by forest type and tree-size class - - - - 25
19. Area of stump land and tonnage of wood naval stores stumps - - - - 26

NET ANNUAL GROWTH
20. Of sawtimber by stand-size class and species group - - - - 27
21. Of growing stock by stand-size class and species group - - - - 27

AVERAGE GROWTH PER ACRE
22. Of sawtimber by forest type and stand-size class - - - - 28
23. Of growing stock by forest type and stand-size class - - - - 28

ANNUAL NET GROWTH PERCENTAGES
24. For sawtimber volumes by stand-size class and species group - - - - 29
25. For growing stock volumes by stand-size class and species group - - - - 29

AVERAGE ANNUAL DRAIN
26. On sawtimber by tree-size class and species group - - - - 30
27. On growing stock by tree-size class and species group - - - - 30

NET CHANGE
28. In sawtimber volume by species group - - - - 31
29. In growing stock by species group - - - - 31

TABLES FOR COUNTIES, 1952

30. County area by broad use class - - - - 32
31. Ownership of commercial forest land - - - - 33
32. Net volume of sawtimber by species group - - - - 34
33. Net volume of sawtimber by broad species group and diameter-class-group - - - - 35
34. Net volume of all timber by pulping species group and tree-diameter group - - - - 36
35. Average annual sawtimber drain by species group - - - - 37
36. Average annual drain on growing stock by species group - - - - 38

DEFINITION OF TERMS - - - - 39

RELIABILITY OF THE DATA - - - - 44

HOW THE FOREST INVENTORY IS MADE - - - - 45

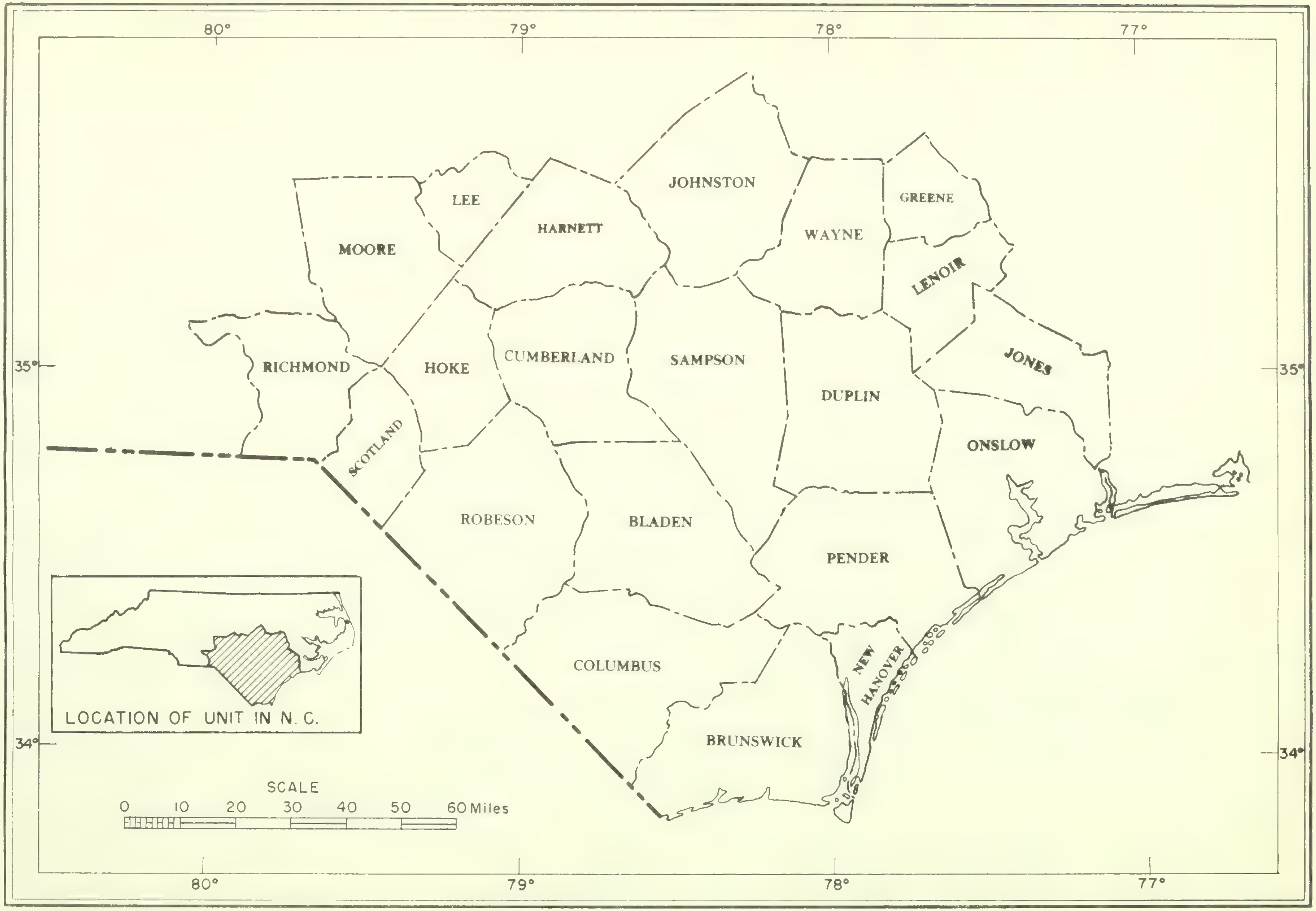

Figure 1.--Counties in the Southern Coastal Plain of North Carolina included in Survey Unit No. 1

FOREST STATISTICS FOR THE SOUTHERN COASTAL PLAIN OF NORTH CAROLINA, 1952

Statistical data on forest area, timber volume, growth, and drain are presented in this progress report for the 21-county area in the Southern Coastal Plain of North Carolina, designated as Survey Unit No. 1 (fig. 1). The field data were obtained by a survey made during the period December 1951 to November 1952. Ground sample plots distributed among all the individual counties were located to collect detailed information. Procedures used in selecting sample plots and collecting the basic data are outlined briefly on page 45.

Changes in area or timber volume which have taken place since the original survey in 1937 are also pointed out. These changes are based on comparisons of similar statistics obtained in both surveys and they indicate trends which are affecting the forest resource.

1952 HIGHLIGHTS AND SIGNIFICANT CHANGES

Forests occupy two-thirds of the land area.--The Southern Coastal Plain of North Carolina is a heavily wooded area. Some 5.5 million acres, or 65 percent of the total land area, are in forest (fig. 2). Practically all the forest land is capable of producing crops of commercial timber, but there are 91 thousand acres of swampland or pocosin which are so wet or infertile they will not grow timber of usable size. The acreage of forest land is slightly less now than it was in 1937, being down 1.4 percent.

Agricultural land amounts to 2.5 million acres, or 30 percent of the total. The remaining 5 percent of land area includes cities, towns, rights-of-way, coastal beaches, and marshland.

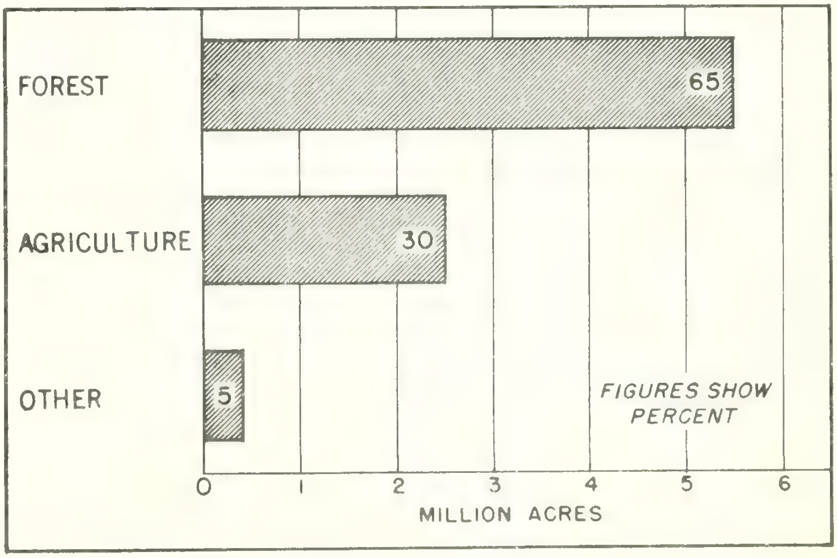

Figure 2.--Land use in the Southern Coastal Plain of North Carolina, 1952

Ninety-two percent of the commercial forest land is in private ownership. Nearly 3.5 million acres, or 64 percent, is in farm woodlands, the remainder being owned by pulp and paper mills, lumber companies, and other private owners. The 455 thousand acres of public forest lands are about equally divided between Federal and State ownership. The bulk of the Federal land is in military establishments, and the State land is mostly in game management areas or in State and school forests.

Pine forests decrease in area.--A comparison of forest type acreages found in 1937 and 1952 shows that pine forests now occur on 743 thousand fewer acres than before. The present distribution of forest area by types is pine 64 percent and hardwoods 36 percent. The 1937 distribution was pine 76 percent and hardwoods 24 percent. Identical forest type definitions were used in both surveys so the resulting data would be comparable.

This change in forest composition is typical of many areas in the Southeast. The cause can usually be traced to cutting practices which remove the preferred pine timber from the stands and leave the less desirable hardwoods to occupy the site. Under current definitions which divide the forest into types on the basis of cubic volume or number of stems, pine types occupy only 54 percent of the commercial forest land.

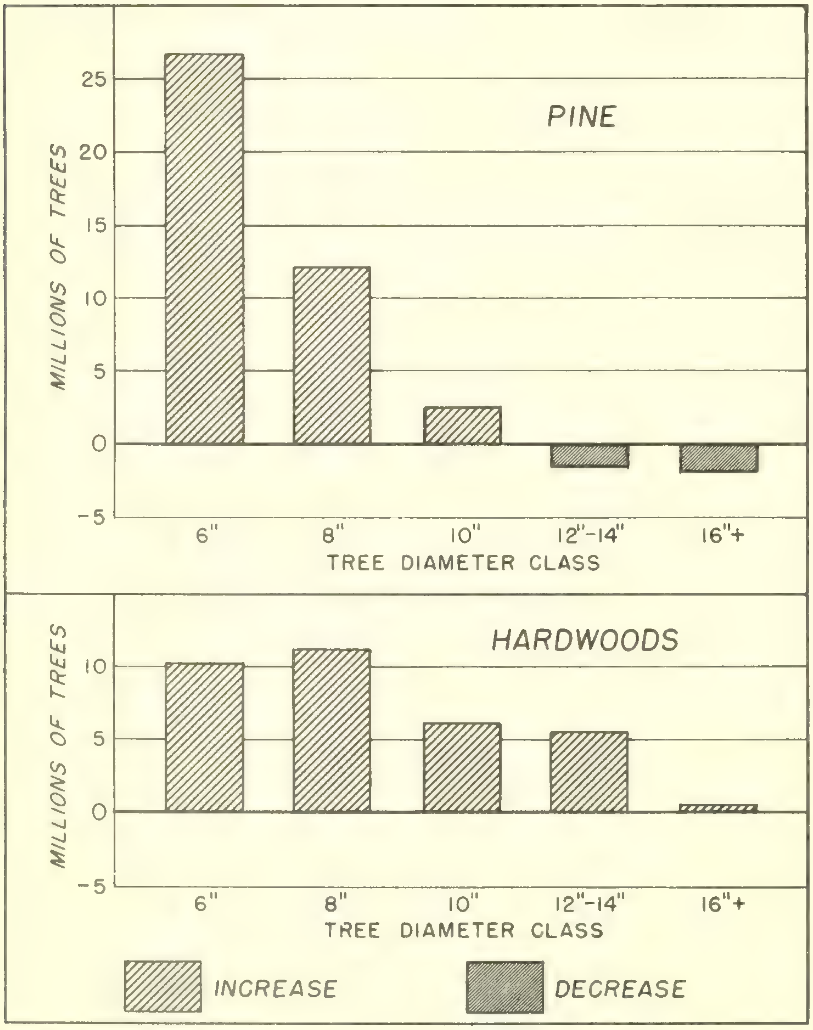

Figure 3.--Change in number of poletimber and larger trees by diameter class and species group

Stocking of young timber improves.--A comparison of the number of sound trees found at the time of each survey reveals a very significant increase in the number of small trees, particularly pines. Increases in the number of 6-, 8-, and 10-inch pines since 1937 amount to a total of 41 million trees (fig. 3). Small hardwoods in the same diameter range have also increased sharply during the period between surveys. These improvements in timber stocking may be largely attributed to improved fire protection, which has cut down the loss of young trees.

Figure 3 also shows the effect of heavy demand for the larger, more valuable trees, and the preference for pine timber. In the 12-inch and larger diameter classes the number of pine trees has decreased nearly 4 million, or about 8 percent, since 1937. There have also been decreases in the number of gums and other soft-textured hardwoods above the 18-inch diameter class. Only among the oaks and other hard-textured hardwoods are there now more large trees than in 1937.

Pine sawtimber volume down 10 percent.--Heavy utilization of pine sawtimber has reduced the volume from 7.6 billion board feet in 1937 to 6.8 billion feet in 1952, a decrease of 10 percent. During the same period hardwood sawtimber trees have added 10 percent to their volume, while cypress remained about the same (table A). These opposite trends in the volume of pine and hardwood sawtimber volume have had a balancing effect resulting in an over-all reduction in volume of only 2 percent.

Table A.--Change in volume of sawtimber, 1937 to 1952

Species group	1937[1]	1952	Change
	Million bd. ft.	Million bd. ft.	Percent
Pines	7,591	6,810	-10
Hardwoods	4,649	5,129	+10
Cypress	552	560	+ 1
All species	12,792	12,499	- 2

[1] Original survey volumes have been recomputed to allow for differences in standards between the two surveys and to provide a uniform basis for comparison. Thus, the 1937 estimate shown here will not agree with volumes previously published.

Softwood species make up 59 percent of the present sawtimber volume. Loblolly pine with 4.7 billion board feet, or 38 percent of the total, is the predominating species. Pond pine, occupying the low, wet areas, is next in importance, followed by longleaf pine and cypress. In the hardwood species group, blackgum, tupelo, and sweetgum account for 2.8 billion feet, 23 percent of the total volume. Different varieties of oak make up most of the remaining sawtimber.

Three-fourths of the board-foot volume is found in stands having a minimum volume of 1,500 board feet per acre. Stands of large sawtimber average 7,680 board feet per acre, and small sawtimber stands average 4,480 feet. The rest of the board-foot volume is scattered throughout stands of poles and smaller trees. Nearly half of the pine sawtimber volume is in trees in the 10- and 12-inch diameter classes.

Quality of large sawtimber trees good.--In the 1952 survey, logs in each sawtimber tree were graded to determine quality, and the results have been summarized by tree-size class (table 7). Sawlogs in softwood trees were graded under the Crossett log grade rules described in USDA Technical Bulletin No. 861, while "Hardwood Log Grades for Standard Lumber" (Forest Products Laboratory publication No. D1737) were used for all hardwoods. In the pines 73 percent of the board-foot volume is in grade 1 and 2 logs. However, about half the volume in trees 16 inches and larger d.b.h. is in grade 1 logs as compared to only 12 percent in trees 10 to 14 inches in diameter. This relationship shows that quality is closely associated with tree size.

The quality of hardwood sawlogs in large sawtimber trees compares favorably with that of softwoods, 42 percent of the volume being in grade 1 and 33 percent in grade 2 logs. In the smaller 12- and 14-inch hardwood trees there is practically no volume in grade 1 and only 32 percent in grade 2. The remaining two-thirds of the volume in this class is composed of low-quality factory lumber logs, or logs from which only crossties and timbers can be manufactured.

Growing stock volume increases 6 percent.--The total growing stock volume increased 6 percent between 1937 and 1952, but the increase was confined to the hardwood species. Pine and cypress volumes show little change (table B).

Table B.--*Volume comparison, all live trees 5.0 inches d.b.h. and larger, 1937 and 1952*

Species group	Growing stock			Cull trees		
	1937[1]	1952	Change	1937[1]	1952	Change
	Million cu. ft.	Million cu. ft.	Percent	Million cu. ft.	Million cu. ft.	Percent
Pines	1,952	1,911	- 2.1	84	58	-31.0
Hardwoods	1,360	1,617	+18.9	375	381	+ 1.6
Cypress	130	129	- 0.8	11	11	0.0
All species	3,442	3,657	+ 6.2	470	450	- 4.3

[1] See footnote 1, table A.

[2] Excludes limb volume of hardwood sawtimber trees.

The total growing stock volume includes all sound trees of pole size (5.0 inches d.b.h. to sawtimber size) as well as the sawtimber trees. Trees smaller than 5.0 inches in size are considered seedlings or saplings and are not assigned volume for inventory purposes.

While the survey results show only a slight decrease in the amount of pine growing stock, there has actually been a considerable shift in volume by tree size. As pointed out in figure 3, heavy increases in the number of small trees have been offset by decreases in trees 12 inches and larger in diameter. The proportion of volume in small trees is now greater than in 1937. Hardwood trees have increased in number throughout the range of diameter classes, creating a 19-percent increase in volume. There has been little actual change in the volume of cull trees.

Planting required to restock some forest land.--In the pine and upland hardwood forest types there are 260,000 acres which are in a poorly stocked condition, and which also lack the necessary seed trees for natural restocking. Most of these areas will need to be planted to bring them back into production within a reasonable length of time. About 76,000 acres can be planted by machine, 104,000 acres can be planted only by hand, and 80,000 acres are so densely covered with brush or are so inaccessible that planting does not appear practical.

Forests composed largely of young timber.--More than 70 percent of the commercial forest land is well stocked or overstocked with sound trees of all sizes; yet the trees which provide this rating are mostly seedlings and saplings, all below volume size. Only 13 percent of the forest land is well stocked with trees 5.0 inches d.b.h. and larger, and the area occupied by well stocked stands of sawtimber is less than 5 percent. These comparisons point out the fact that much of the forest area is now actually deficient in growing stock volume, but at the same time they indicate a better potential stocking in the future as the smaller trees grow into volume size.

Wood naval stores stumps total 2.2 million tons.--Cured, old-growth stumps of longleaf pine useful for the extraction of wood naval stores products are found throughout the area, with the heaviest concentrations in Brunswick, Bladen, Columbus, Pender, and Sampson Counties. They occur on a harvestable area of 1.1 million acres, and the total volume amounts to 2.2 million tons, or an average of 2 tons per acre.

Current timber growth exceeds drain.--In 1952 timber growth exceeded drain both in sawtimber and total growing stock for all species groups (fig. 4). This favorable trend resulted in an estimated annual increase in board-foot volume of 2.6 percent, and a 2.9-percent rise in the volume of growing stock.

Total sawtimber growth amounted to 891 million board feet compared to 563 million feet of drain. Growth of pine sawtimber was 621 million feet, or 70 percent of the total, yet because of heavier drain, the gain in pine volume amounts to only half the over-all volume increase. The increment in sound growing stock trees 5.0 inches d.b.h. and larger was 106 million cubic feet greater than the drain.

The estimated volume of growth includes the growth on all sound trees of volume size plus the ingrowth created by smaller trees which reach volume size during the year. Mortality, or the loss of volume in trees which die from natural causes, is deducted. Timber drain volume is based on measurement and tally of stumps found on ground sample plots. Stumps of all trees cut during the past three-year period were recorded by species groups and the measurements were converted into tree volume. The average volume of drain for the three-year period was taken as the annual estimate.

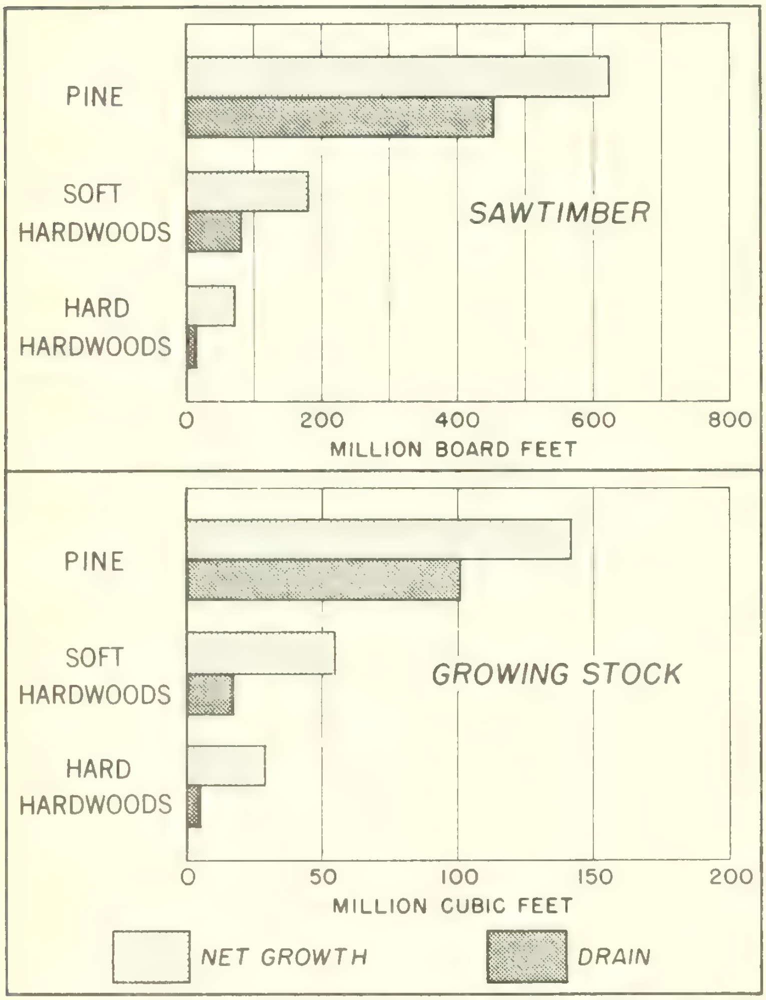

Figure 4.--Timber growth and drain relationship in the Southern Coastal Plain of North Carolina

It is interesting to note that the volume of ingrowth makes up a sizable proportion of the total growth estimate. Thirty-seven percent of the net board-foot growth is credited to small trees which grew into sawtimber size during the year. The rate of ingrowth is highest for the pine species in poletimber stands, where it approximates half the growth for this class. Recruitment of trees into pole size accounts for 17 percent of the cubic volume growth on all growing stock. Ingrowth will continue to be an important factor in future growth estimates because of the large number of trees in small diameter classes.

With the exception of pine sawtimber, the drain on the forests as a result of timber cutting was slightly lower in 1952 than in 1937. During the period between surveys the volume of drain has apparently reached higher levels. There is considerable evidence that annual timber drain follows a cyclical pattern, changing with the migration of sawmills, shifts in demand and utilization practices, and the ups and downs of the general business cycle. The current relationship of growth and drain leaves a margin of volume which is building up the growing stock. Whether or not this trend can continue will depend largely on the future demand for wood products and the effectiveness of forest management practices aimed at increasing the supply of timber.

Table 1.--Gross area[1] by broad use class, 1952

Class of use	Area	
	Thousand acres	Percent
Forest land:		
Commercial	5,388.9	63.4
Noncommercial:		
Reserved from commercial use	4.9	0.1
Unproductive for timber use	86.0	1.0
Total forest	5,479.8	64.5
Nonforest land:		
Agriculture	2,510.5	29.5
Marsh	77.1	0.9
Urban and other[2]	287.2	3.4
Total nonforest	2,874.8	33.8
Total land area	8,354.6	98.3
Total water area[3]	142.7	1.7
All classes	8,497.3	100.0

[1] From U. S. Bureau of the Census, 1950.

[2] Includes urban, suburban residential, and rural industrial areas, rights-of-way, cemeteries, schools, etc.

[3] Includes 33,200 acres of water according to Survey standards of area classification but defined by the Bureau of Census as land.

Table 2.--Ownership of commercial forest land, 1952

Class of ownership	Commercial forest land	
	Thousand acres	Percent
Public land:		
National forest	25.0	0.5
Indian	--	--
Other federal	201.7	3.7
Total federal	226.7	4.2
State	224.5	4.1
County and municipal	4.0	0.1
Total public	455.2	8.4
Private land:		
Farm	3,453.6	64.1
Other	1,480.1	27.5
Total private	4,933.7	91.6
All classes	5,388.9	100.0

Table 3.--Commercial forest area by forest type and stand-size class, 1952

(In thousand acres)

Forest type[1]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	6.0	82.6	319.7	169.8	39.1	617.2
Loblolly pine	156.6	492.8	478.5	302.3	7.5	1,437.7
Shortleaf pine	1.3	17.0	28.2	7.7	--	54.2
Pond pine	28.1	126.5	237.9	371.3	44.3	808.1
Total	192.0	718.9	1,064.3	851.1	90.9	2,917.2
Other types:						
Oak-pine	46.1	73.1	170.5	327.1	9.7	626.5
Oak-hickory:						
Upland hdwds.	31.1	38.3	122.5	175.2	2.8	369.9
Scrub oak	--	--	--	68.8	133.3	202.1
Oak-gum-cypress:						
Lowland hdwds.	321.3	198.8	267.5	425.8	11.7	1,225.1
Cypress	9.9	18.5	10.8	7.3	1.6	48.1
Total	408.4	328.7	571.3	1,004.2	159.1	2,471.7
All types	600.4	1,047.6	1,635.6	1,855.3	250.0	5,388.9
Percent	11.2	19.4	30.4	34.4	4.6	100.0

[1] See description of forest types and stand-size classes in appendix.

Table 4.--Net volume[1] of sawtimber by species and stand-size class, 1952

(In million board feet)

Species[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	65.5	300.4	203.2	77.0	20.0	666.1
Loblolly pine	1,327.6	2,250.7	720.8	428.0	21.4	4,748.5
Pond pine	168.5	589.5	260.6	195.1	26.8	1,240.5
Shortleaf pine	27.3	81.3	38.1	8.5	--	155.2
Total pine	1,588.9	3,221.9	1,222.7	708.6	68.2	6,810.3
Cypress	308.8	97.0	81.9	20.9	3.5	512.1
Cedar	21.3	15.1	11.4	--	--	47.8
Total sftwds.	1,919.0	3,334.0	1,316.0	729.5	71.7	7,370.2
Hardwoods:						
Bl. & tupelo gum	914.0	548.3	220.7	97.7	9.7	1,790.4
Sweetgum	548.2	300.1	128.9	56.1	--	1,033.3
Yellow-poplar	160.5	90.9	54.0	14.8	--	320.2
Soft maple	157.0	80.1	30.5	22.6	3.6	293.8
Other soft hdwds.	5.6	13.9	8.1	1.5	0.6	29.7
Total	1,785.3	1,033.3	442.2	192.7	13.9	3,467.4
White & swamp chestnut oaks	132.9	91.1	72.6	23.1	2.2	321.9
Other white oaks	13.4	22.8	24.0	10.3	--	70.5
No. red & swamp red oaks	30.4	20.5	18.2	14.9	--	84.0
Other red oaks	423.2	142.5	118.5	42.9	--	727.1
Hickory	62.7	25.2	27.1	18.7	3.9	137.6
Ash	119.5	16.3	5.4	--	--	141.2
Other hard hdwds.	125.8	9.3	22.3	21.1	0.6	179.1
Total	907.9	327.7	288.1	131.0	6.7	1,661.4
Total hdwds.	2,693.2	1,361.0	730.3	323.7	20.6	5,128.8
All species	4,612.2	4,695.0	2,046.3	1,053.2	92.3	12,499.0
Percent	36.9	37.6	16.4	8.4	0.7	100.0

[1] Log scale, International 1/4-inch rule.

[2] See appendix for species combined with others.

Table 5.--Net volume[1] of sawtimber by species and diameter class, 1952

Species	10-12 inches[2]	14-18 inches	20-24 inches	26+ inches	All diameters	
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent
Softwoods:						
Longleaf pine	400.4	221.3	44.4	--	666.1	5.3
Loblolly pine	2,099.6	2,087.6	471.3	90.0	4,748.5	38.0
Pond pine	679.0	510.0	51.5	--	1,240.5	9.9
Shortleaf pine	105.1	36.6	13.5	--	155.2	1.3
Total pine	3,284.1	2,855.5	580.7	90.0	6,810.3	54.5
Cypress	137.0	212.0	76.4	86.7	512.1	4.1
Cedar	28.9	13.9	5.0	--	47.8	0.4
Total sftwds.	3,450.0	3,081.4	662.1	176.7	7,370.2	59.0
Hardwoods:						
Bl. & tupelo gum	383.9	1,110.0	258.3	38.2	1,790.4	14.3
Sweetgum	171.4	610.3	200.1	51.5	1,033.3	8.3
Yellow-poplar	53.2	202.2	64.8	--	320.2	2.6
Soft maple	54.9	192.1	32.3	14.5	293.8	2.3
Other soft hdwds.	14.4	15.3	--	--	29.7	0.2
Total	677.8	2,129.9	555.5	104.2	3,467.4	27.7
White & swamp chestnut oaks	78.2	145.4	39.2	59.1	321.9	2.6
Other white oaks	31.2	30.8	3.0	5.5	70.5	0.6
No. red and swamp red oaks	17.0	35.1	17.4	14.5	84.0	0.7
Other red oaks	86.8	294.5	204.4	141.4	727.1	5.8
Hickory	27.0	62.1	34.4	14.1	137.6	1.1
Ash	30.5	77.1	22.3	11.3	141.2	1.1
Other hard hdwds.	27.9	67.6	61.6	22.0	179.1	1.4
Total	298.6	712.6	382.3	267.9	1,661.4	13.3
Total hdwds.	976.4	2,842.5	937.8	372.1	5,128.8	41.0
All species	4,426.4	5,923.9	1,599.9	548.8	12,499.0	100.0
Percent	35.4	47.4	12.8	4.4	100.0	

[1] Log scale, International 1/4-inch rule.

[2] Ten-inch hardwoods are not included.

Table 6.--Net volume[1] of sawtimber by forest type and stand-size class, 1952

(In million board feet)

Forest type[2]	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	35.2	265.9	210.6	34.0	10.2	555.9
Loblolly pine	1,272.6	2,251.0	616.8	151.5	5.0	4,296.9
Shortleaf pine	7.0	74.4	27.5	--	--	108.9
Pond pine	151.2	569.5	239.5	160.0	26.2	1,146.4
Total	1,466.0	3,160.8	1,094.4	345.5	41.4	6,108.1
Other types:						
Oak-pine	327.6	359.5	244.1	209.2	1.9	1,142.3
Oak-hickory:						
Upland hdwds.	204.9	118.6	174.5	120.3	2.5	620.8
Scrub oak	--	--	--	33.9	24.8	58.7
Oak-gum-cypress:						
Lowland hdwds.	2,516.8	976.2	493.4	334.8	9.2	4,330.4
Cypress	96.9	79.9	39.9	9.5	12.5	238.7
Total	3,146.2	1,534.2	951.9	707.7	50.9	6,390.9
All types	4,612.2	4,695.0	2,046.3	1,053.2	92.3	12,499.0
Percent	36.9	37.6	16.4	8.4	0.7	100.0

[1] Log scale, International 1/4-inch rule.

[2] See description of forest types and stand-size classes in appendix.

Table 7.--Net volume of sawtimber by species group, log grade, and tree-size class, 1952

PINE

Log grade	10 - 14 inches		16+ inches		All trees	
	Million bd. ft.	Percent	Million bd. ft.	Percent	Million bd. ft.	Percent
Grade 1	570.8	12.1	1,027.6	49.1	1,598.4	23.5
Grade 2	2,915.4	61.8	450.0	21.5	3,365.4	49.4
Grade 3	1,231.2	26.1	615.3	29.4	1,846.5	27.1
Total	4,717.4	100.0	2,092.9	100.0	6,810.3	100.0

OTHER SOFTWOODS

Log grade	10 - 14 inches		16+ inches		All trees	
	Million bd. ft.	Percent	Million bd. ft.	Percent	Million bd. ft.	Percent
Grade 1	22.6	9.3	162.7	51.3	185.3	33.1
Grade 2	178.2	73.4	89.1	28.1	267.3	47.7
Grade 3	42.0	17.3	65.3	20.6	107.3	19.2
Total	242.8	100.0	317.1	100.0	559.9	100.0

HARDWOODS

Log grade	10 - 14 inches		16+ inches		All trees	
	Million bd. ft.	Percent	Million bd. ft.	Percent	Million bd. ft.	Percent
Grade 1	15.3	0.7	1,235.0	41.9	1,250.3	24.4
Grade 2	702.4	32.2	972.7	33.0	1,675.1	32.6
Grade 3	1,463.6	67.1	739.8	25.1	2,203.4	43.0
Total	2,181.3	100.0	2,947.5	100.0	5,128.8	100.0

Table 8.--Net volume[1] of all timber by species and stand-size class, 1952

(In thousand cords)

GROWING STOCK

Species	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Softwoods:						
Longleaf pine	179	1,007	1,756	328	86	3,356
Loblolly pine	3,317	7,362	4,322	1,607	64	16,672
Pond pine	443	1,934	1,700	893	86	5,056
Shortleaf pine	67	451	430	105	--	1,053
Total pine	4,006	10,754	8,208	2,933	236	26,137
Cypress	699	290	273	67	18	1,347
Cedar	48	43	62	6	--	159
Total sftwds.	4,753	11,087	8,543	3,006	254	27,643
Hardwoods:						
Bl. & tupelo gum	3,028	2,511	1,354	497	42	7,432
Sweetgum	1,580	1,155	965	304	--	4,004
Yellow-poplar	540	375	275	127	--	1,317
Soft maple	575	559	316	151	8	1,609
Other soft hdwds.	69	72	79	66	2	288
Total	5,792	4,672	2,989	1,145	52	14,650
White & swamp chestnut oaks	349	311	584	63	5	1,312
Other white oaks	48	132	282	76	--	538
No. red & swamp red oaks	101	108	153	64	--	426
Other red oaks	1,164	644	687	225	--	2,720
Hickory	208	114	131	82	29	564
Ash	427	102	80	--	--	609
Dogwood, persimmon	76	48	87	4	3	218
Other hard hdwds.	429	70	161	104	2	766
Total	2,802	1,529	2,165	618	39	7,153
Total hdwds.	8,594	6,201	5,154	1,763	91	21,803
All species	13,347	17,288	13,697	4,769	345	49,446
Percent	27.0	35.0	27.7	9.6	0.7	100.0

OTHER MATERIAL

Sound culls						
Softwoods	24	181	316	225	26	772
Hardwoods[2]	917	950	1,169	878	128	4,042
Rotten culls	564	379	359	252	8	1,562
Hardwood limbs	1,496	792	506	262	13	3,069
Total other material	3,001	2,302	2,350	1,617	175	9,445

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 9.--Net volume[1] of all timber by species and diameter class, 1952

(In thousand cords)

GROWING STOCK

Species	Pole trees		Sawtimber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	666	814	705	532	542	97	3,356
Loblolly pine	1,494	2,618	3,062	3,235	5,061	1,202	16,672
Pond pine	583	1,022	1,059	1,036	1,246	110	5,056
Shortleaf pine	245	375	191	125	88	29	1,053
Total pine	2,988	4,829	5,017	4,928	6,937	1,438	26,137
Cypress	39	165	170	207	465	301	1,347
Cedar	16	25	38	40	30	10	159
Total sftwds.	3,043	5,019	5,225	5,175	7,432	1,749	27,643
Hardwoods:							
Bl. & tupelo gum	527	1,064	1,191	1,180	2,806	664	7,432
Sweetgum	346	499	423	601	1,571	564	4,004
Yellow-poplar	85	220	170	184	513	145	1,317
Soft maple	173	296	327	194	511	108	1,609
Other soft hdwds.	47	81	79	42	39	--	288
Total	1,178	2,160	2,190	2,201	5,440	1,481	14,650
White & swamp chestnut oaks	122	170	239	205	353	223	1,312
Other white oaks	77	117	166	81	78	19	538
No. red & swamp red oaks	54	77	88	48	88	71	426
Other red oaks	207	344	363	277	754	775	2,720
Hickory	63	45	103	87	158	108	564
Ash	65	95	82	97	195	75	609
Dogwood, persimmon	105	68	14	18	13	--	218
Other hard hdwds.	42	128	155	80	169	192	766
Total	735	1,044	1,210	893	1,808	1,463	7,153
Total hdwds.	1,913	3,204	3,400	3,094	7,248	2,944	21,803
All species	4,956	8,223	8,625	8,269	14,680	4,693	49,446
Percent	10.0	16.6	17.5	16.7	29.7	9.5	100.0

OTHER MATERIAL

Sound culls							
Softwoods	158	217	149	91	154	3	772
Hardwoods[2]	993	953	777	487	627	205	4,042
Rotten culls	44	100	126	134	497	661	1,562
Hardwood limbs	--	--	--	656	1,666	747	3,069
Total other material	1,195	1,270	1,052	1,368	2,944	1,616	9,445

[1] Sound wood and bark.

[2] Includes noncommercial species.

Table 10.--Net volume[1] of all timber by species and class of material, 1952

(In thousand cords)

Species	GROWING STOCK				OTHER MATERIAL	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	1,561	315	1,480	3,356	66	18
Loblolly pine	10,088	2,472	4,112	16,672	247	21
Pond pine	2,735	716	1,605	5,056	374	51
Shortleaf pine	346	87	620	1,053	44	--
Total pine	14,730	3,590	7,817	26,137	731	90
Cypress	933	210	204	1,347	40	74
Cedar	97	21	41	159	1	3
Total sftwds.	15,760	3,821	8,062	27,643	772	167
Hardwoods:						
Bl. & tupelo gum	3,816	834	2,782	7,432	1,861	695
Sweetgum	2,164	572	1,268	4,004	896	107
Yellow-poplar	675	167	475	1,317	227	37
Soft maple	657	156	796	1,609	969	359
Other soft hdwds.	70	11	207	288	98	23
Total	7,382	1,740	5,528	14,650	4,051	1,221
White & swamp chestnut oaks	623	158	531	1,312	251	24
Other white oaks	144	34	360	538	230	47
No. red & swamp red oaks	165	42	219	426	72	15
Other red oaks	1,490	316	914	2,720	778	260
Hickory	291	62	211	564	119	14
Ash	308	59	242	609	190	33
Dogwood, persimmon	29	2	187	218	118	17
Scrub oak[3]	--	--	--	--	852	--
Other hard hdwds.	357	84	325	766	204	10
Total	3,407	757	2,989	7,153	2,814	420
Total hdwds.	10,789	2,497	8,517	21,803	6,865	1,641
All species	26,549	6,318	16,579	49,446	7,637	1,808
Percent	53.7	12.8	33.5	100.0	80.9	19.1

[1] Sound wood and bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes noncommercial species.

Table 11.--Net volume[1] of all timber by forest type and stand-size class, 1952

(In thousand cords)

GROWING STOCK

Forest type	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Seedling & sapling stands	Poorly stocked stands & unstocked areas	All stands
Pine types:						
Longleaf pine	102	908	1,800	185	49	3,044
Loblolly pine	3,389	7,892	4,224	714	19	16,238
Shortleaf pine	15	364	295	24	--	698
Pond pine	409	1,856	1,582	720	94	4,661
Total	3,915	11,020	7,901	1,643	162	24,641
Other types:						
Oak-pine	928	1,373	1,463	927	5	4,696
Oak-hickory:						
Upland hdwds.	595	560	1,141	519	6	2,821
Scrub oak	--	--	--	124	100	224
Oak-gum-cypress:						
Lowland hdwds.	7,604	3,975	3,062	1,526	23	16,190
Cypress	305	360	130	30	49	874
Total	9,432	6,268	5,796	3,126	183	24,805
All types	13,347	17,288	13,697	4,769	345	49,446
Percent	27.0	35.0	27.7	9.6	0.7	100.0
OTHER MATERIAL						
Pine types:						
Longleaf pine	3	15	103	61	17	199
Loblolly pine	204	589	385	82	--	1,260
Shortleaf pine	1	12	39	--	--	52
Pond pine	24	99	150	214	21	508
Total	232	715	677	357	38	2,019
Other types:						
Oak-pine	217	278	317	295	1	1,108
Oak-hickory:						
Upland hdwds.	129	74	284	202	1	690
Scrub oak	--	--	--	92	82	174
Oak-gum-cypress:						
Lowland hdwds.	2,405	1,168	1,050	652	45	5,320
Cypress	18	67	22	19	8	134
Total	2,769	1,587	1,673	1,260	137	7,426
All types	3,001	2,302	2,350	1,617	175	9,445
Percent	31.8	24.4	24.9	17.1	1.8	100.0

[1] Sound wood and bark.

Table 12.--Net volume[1] of all timber by species and diameter class, 1952

(In million cubic feet)

GROWING STOCK

Species	Pole trees		Sawtimber trees				All diameters
	6 inches	8 inches	10 inches	12 inches	14-18 inches	20+ inches	
Softwoods:							
Longleaf pine	39.0	55.3	52.5	40.1	43.2	8.4	238.5
Loblolly pine	87.4	175.5	220.4	243.1	405.0	102.5	1,233.9
Pond pine	35.0	68.7	75.4	77.6	98.8	9.4	364.9
Shortleaf pine	14.4	25.5	14.2	9.3	7.2	2.5	73.1
Total pine	175.8	325.0	362.5	370.1	554.2	122.8	1,910.4
Cypress	2.7	12.2	13.2	17.8	41.3	29.2	116.4
Cedar	1.1	1.8	3.0	3.4	2.7	0.9	12.9
Total sftwds.	179.6	339.0	378.7	391.3	598.2	152.9	2,039.7
Hardwoods:							
Bl. & tupelo gum	30.3	69.6	85.6	91.8	221.7	54.9	553.9
Sweetgum	19.6	32.7	30.3	44.8	123.9	46.4	297.7
Yellow-poplar	4.8	14.4	12.1	13.9	40.7	12.0	97.9
Soft maple	9.9	19.5	23.2	15.1	39.8	8.9	116.4
Other soft hdwds.	2.7	5.2	5.7	3.4	3.1	--	20.1
Total	67.3	141.4	156.9	169.0	429.2	122.2	1,086.0
White & swamp chestnut oaks	7.0	11.1	17.1	15.4	28.2	18.3	97.1
Other white oaks	4.2	7.7	12.0	6.1	6.0	1.6	37.6
No. red & swamp red oaks	3.1	5.0	6.3	3.7	7.0	5.9	31.0
Other red oaks	11.5	22.7	26.3	21.8	60.2	63.9	206.4
Hickory	3.6	2.8	7.4	6.8	12.7	9.0	42.3
Ash	3.6	6.3	6.0	7.7	15.7	6.1	45.4
Dogwood, persimmon	5.9	4.5	1.0	1.5	1.1	--	14.0
Other hard hdwds.	2.3	8.5	11.1	6.2	13.2	15.9	57.2
Total	41.2	68.6	87.2	69.2	144.1	120.7	531.0
Total hdwds.	108.5	210.0	244.1	238.2	573.3	242.9	1,617.0
All species	288.1	549.0	622.8	629.5	1,171.5	395.8	3,656.7
Percent	7.9	15.0	17.0	17.2	32.1	10.8	100.0
OTHER MATERIAL							
Sound culls							
Softwoods	9.5	14.7	11.4	6.7	12.3	0.3	54.9
Hardwoods[2]	56.7	62.8	55.9	32.9	49.1	17.2	274.6
Rotten culls	2.8	6.8	8.7	8.9	37.5	56.0	120.7
Hardwood limbs	--	--	--	43.3	127.3	64.1	234.7
Total other material	69.0	84.3	76.0	91.8	226.2	137.6	684.9

[1] Excluding bark.

[2] Includes noncommercial species.

Table 13.--Net volume[1] of all timber by species and class of material, 1952

(In million cubic feet)

Species	GROWING STOCK				OTHER MATERIAL	
	Sawtimber trees		Pole-timber trees	Total sound trees	Sound culls[2]	Rotten culls
	Sawlog portion	Upper stems				
Softwoods:						
Longleaf pine	119.0	25.2	94.3	238.5	4.9	1.5
Loblolly pine	788.5	182.5	262.9	1,233.9	17.5	1.6
Pond pine	213.1	48.1	103.7	364.9	26.0	3.5
Shortleaf pine	27.2	6.0	39.9	73.1	3.2	--
Total pine	1,147.8	261.8	500.8	1,910.4	51.6	6.6
Cypress	81.9	19.6	14.9	116.4	3.2	7.1
Cedar	8.1	1.9	2.9	12.9	0.1	0.3
Total sftwds.	1,237.8	283.3	518.6	2,039.7	54.9	14.0
Hardwoods:						
Bl. & tupelo gum	300.3	68.1	185.5	553.9	136.9	52.6
Sweetgum	174.6	40.5	82.6	297.7	62.2	9.1
Yellow-poplar	54.1	12.5	31.3	97.9	16.7	2.8
Soft maple	51.8	12.0	52.6	116.4	67.4	25.0
Other soft hdwds.	5.4	1.1	13.6	20.1	6.4	1.5
Total	586.2	134.2	365.6	1,086.0	289.6	91.0
White & swamp chestnut oaks	49.6	12.3	35.2	97.1	18.4	1.8
Other white oaks	11.1	2.6	23.9	37.6	15.6	3.7
No. red & swamp red oaks	13.4	3.2	14.4	31.0	5.4	1.2
Other red oaks	117.7	28.2	60.5	206.4	59.8	21.6
Hickory	23.1	5.4	13.8	42.3	9.3	1.4
Ash	24.0	5.5	15.9	45.4	14.3	2.7
Dogwood, persimmon	2.2	0.4	11.4	14.0	7.7	1.2
Scrub oak[3]	--	--	--	--	55.9	--
Other hard hdwds.	28.6	6.7	21.9	57.2	14.6	0.8
Total	269.7	64.3	197.0	531.0	201.0	34.4
Total hdwds.	855.9	198.5	562.6	1,617.0	490.6	125.4
All species	2,093.7	481.8	1,081.2	3,656.7	545.5	139.4
Percent	57.2	13.2	29.6	100.0	79.6	20.4

[1] Excluding bark.

[2] Includes limb volume of hardwood sawtimber trees.

[3] Includes noncommercial species.

Table 14.--Average volume[1] per acre of sawtimber by forest type, species group, and stand-size class, 1952

(In board feet)

Forest type and species group	Large sawtimber stands	Small sawtimber stands	Pole-timber stands	Other stand sizes	All stands
Longleaf pine					
Softwood	5,863	3,204	649	212	894
Hardwood	--	14	10	--	7
Loblolly pine					
Softwood	7,509	4,254	1,187	480	2,775
Hardwood	617	313	102	25	214
Shortleaf pine					
Softwood	5,222	3,328	658	--	1,509
Hardwood	310	1,046	316	--	500
Pond pine					
Softwood	5,336	4,452	1,006	429	1,399
Hardwood	52	52	--	19	20
Oak-pine					
Softwood	3,427	2,414	798	459	997
Hardwood	3,677	2,507	634	168	826
Upland hdwds.					
Softwood	554	290	138	359	295
Hardwood	6,023	2,805	1,287	331	1,383
Scrub oak					
Softwood	--	--	--	209	209
Hardwood	--	--	--	81	81
Oak-gum-cypress					
Softwood	1,136	762	466	379	661
Hardwood	6,757	4,097	1,450	440	2,928
All types					
Softwood	3,196	3,183	805	381	1,368
Hardwood	4,486	1,299	447	164	952

[1] Log scale, International 1/4-inch rule.

Table 15.--Average volume[1] per acre of all trees by forest type, species group, and stand size, 1952

(In standard cords)

Forest type and species group	Large sawtimber stands		Small sawtimber stands		Pole-timber stands		Other stand sizes		All stands	
	Sound[2]	Cull[2]	Sound	Cull	Sound	Cull	Sound	Cull	Sound	Cull
Longleaf pine										
Softwood	15.6	--	11.0	0.1	5.6	0.1	1.1	0.1	4.9	0.1
Hardwood	1.3	0.5	([3])	0.1	0.1	0.2	([3])	0.3	([3])	0.2
Loblolly pine										
Softwood	19.0	0.2	14.1	0.3	7.6	0.2	2.0	([3])	9.9	0.2
Hardwood	2.7	1.1	1.9	0.9	1.2	0.6	0.3	0.2	1.4	0.7
Shortleaf pine										
Softwood	11.0	--	17.2	0.1	8.0	0.6	3.1	--	10.2	0.3
Hardwood	0.8	0.8	4.2	0.6	2.5	0.8	--	--	2.6	0.6
Pond pine										
Softwood	13.3	0.2	14.5	0.5	6.6	0.6	1.8	0.4	5.6	0.5
Hardwood	1.3	0.6	0.1	0.3	--	0.1	0.1	0.1	0.1	0.2
Oak-pine										
Softwood	8.4	--	7.6	([3])	4.2	([3])	1.8	0.1	3.6	([3])
Hardwood	11.7	4.7	11.2	3.8	4.4	1.8	1.0	0.8	3.9	1.7
Upland hardwoods										
Softwood	1.5	--	1.3	--	1.1	--	1.3	([3])	1.2	([3])
Hardwood	17.6	4.1	13.4	1.9	8.2	2.3	1.6	1.1	6.4	1.8
Scrub oak										
Softwood	--	--	--	--	--	--	0.7	0.1	0.7	0.1
Hardwood	--	--	--	--	--	--	0.4	0.8	0.4	0.8
Oak-gum-cypress										
Softwood	2.6	0.1	2.2	0.2	1.7	0.1	1.4	0.1	1.9	0.1
Hardwood	21.3	7.2	17.7	5.5	9.8	3.7	2.2	1.5	11.5	4.2
All types										
Softwood	7.9	0.1	10.6	0.2	5.2	0.2	1.5	0.1	5.1	0.2
Hardwood	14.3	4.9	5.9	2.0	3.2	1.2	0.9	0.7	4.0	1.6

[1] Sound wood and bark.

[2] Sound trees; cull trees.

[3] Less than 0.05 cords per acre.

Table 16.--Number of trees[1] by species group, quality class, and tree size, 1952

(In thousands of trees)

Species group and quality class	Sapling-size trees	Pole-size trees	Small sawtimber trees	Large sawtimber trees	All trees
Yellow pines:					
Sound trees	559,024	162,051	70,662	8,309	800,046
Sound culls	27,522	9,262	2,288	244	39,316
Rotten culls	2,038	236	497	213	2,984
Total	588,584	171,549	73,447	8,766	842,346
Other softwoods:					
Sound trees	25,414	4,589	3,228	855	34,086
Sound culls	1,491	449	179	18	2,137
Rotten culls	--	114	142	219	475
Total	26,905	5,152	3,549	1,092	36,698
Soft-textured hdwds.:					
Sound trees	651,193	81,186	19,352	8,411	760,142
Sound culls	140,549	26,227	2,485	857	170,118
Rotten culls	10,132	8,356	2,868	3,477	24,833
Total	801,874	115,769	24,705	12,745	955,093
Hard-textured hdwds.:					
Sound trees	473,736	50,149	8,540	4,156	536,581
Sound culls[2]	432,973	36,196	2,060	595	471,824
Rotten culls	8,647	3,904	1,123	1,260	14,934
Total	915,356	90,249	11,723	6,011	1,023,339
All species	2,332,719	382,719	113,424	28,614	2,857,476

[1] All trees 1.0 inch d.b.h. and larger.

[2] Includes scrub oak and noncommercial species.

Table 17.--Area[1] of seedling, sapling, and poorly stocked stands by plantability class, 1952

(In thousands of acres)

Forest type	No planting required[2]	Suitable for machine planting	Hand planting required	All classes
Longleaf pine	174.0	15.7	19.2	208.9
Loblolly pine	294.9	9.1	5.8	309.8
Shortleaf pine	6.6	--	1.1	7.7
Pond pine	361.0	7.5	12.0	380.5
Oak-pine	320.8	7.9	8.1	336.8
Upland hdwds.	173.4	0.9	3.7	178.0
Scrub oak	68.0	35.2	54.5	157.7
All types	1,398.7	76.3	104.4	1,579.4
Percent	88.6	4.8	6.6	100.0

[1] Excludes 1,273,200 acres in oak-gum-cypress type, and 79,500 acres of other types on which planting is impractical due to dense brush cover.

[2] Sufficient seed trees present or area is restocking naturally.

Table 18.--Stocking on commercial forest area by forest type and tree-size class, 1952

(In thousands of acres)

Forest type	Non-stocked 0-9%	Poor stocking 10-39%	Medium stocking 40-69%	Good stocking 70-99%	Over-stocked 100+%	Total area
GROWING STOCK OF ALL SIZES						
Longleaf pine	25.7	217.6	163.3	70.1	140.5	617.2
Loblolly pine	2.3	98.1	144.2	148.4	1,044.7	1,437.7
Shortleaf pine	--	1.1	--	6.0	47.1	54.2
Pond pine	39.3	130.7	89.1	84.4	464.6	808.1
Oak-pine	9.7	61.6	45.0	56.3	453.9	626.5
Upland hdwds.	2.8	6.7	43.1	40.5	276.8	369.9
Scrub oak	122.0	63.3	4.7	4.5	7.6	202.1
Lowland hdwds.	6.5	84.3	140.1	143.5	850.7	1,225.1
Cypress	1.6	4.6	--	6.4	35.5	48.1
All types	209.9	668.0	629.5	560.1	3,321.4	5,388.9
Percent	3.9	12.4	11.7	10.4	61.6	100.0
GROWING STOCK 5.0 INCHES DBH AND LARGER						
Longleaf pine	196.0	310.1	62.5	38.4	10.2	617.2
Loblolly pine	240.4	687.7	266.8	137.7	105.1	1,437.7
Shortleaf pine	7.7	18.8	18.4	5.0	4.3	54.2
Pond pine	362.5	317.9	81.9	35.9	9.9	808.1
Oak-pine	271.3	241.9	74.1	24.4	14.8	626.5
Upland hdwds.	139.6	135.6	78.4	13.8	2.5	369.9
Scrub oak	188.5	13.6	--	--	--	202.1
Lowland hdwds.	337.4	404.0	215.2	160.5	108.0	1,225.1
Cypress	6.3	17.0	12.3	3.6	8.9	48.1
All types	1,749.7	2,146.6	809.6	419.3	263.7	5,388.9
Percent	32.5	39.8	15.0	7.8	4.9	100.0
SAWTIMBER GROWING STOCK						
Longleaf pine	390.0	193.7	26.2	4.9	2.4	617.2
Loblolly pine	497.1	639.1	201.7	82.9	16.9	1,437.7
Shortleaf pine	20.5	27.2	4.0	2.5	--	54.2
Pond pind	509.4	228.9	50.5	16.8	2.5	808.1
Oak-pine	354.8	217.9	38.8	12.6	2.4	626.5
Upland hdwds.	210.1	135.8	21.3	2.7	--	369.9
Scrub oak	190.8	11.3	--	--	--	202.1
Lowland hdwds.	460.7	473.9	185.1	68.8	36.6	1,225.1
Cypress	10.9	25.9	7.6	2.5	1.2	48.1
All types	2,644.3	1,953.7	535.2	193.7	62.0	5,388.9
Percent	49.1	36.3	9.9	3.6	1.1	100.0

Table 19.--Area of stump land and tonnage of wood naval stores stumps by availability class, 1952

Availability class	Area	No. stumps	Tonnage[1]
	Thousand acres	Thousand stumps	Thousand tons
Merchantable area	1,092.9	17,197	2,218
Marginal area[1]	179.7	1,763	227
Potential area[2]	125.3	1,240	160
Inaccessible area	4.8	37	5
All classes	1,402.7	20,237	2,610

[1] Stump-land areas less than 25 acres in extent.

[2] Areas unworkable at present due to density of timber stands.

Table 20.--Net annual growth of sawtimber by stand-size class and species group, 1952

(In thousand board feet)

Stand-size class	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Sawtimber stands	338,648	10,707	131,905	51,167	532,427
Poletimber stands	214,587	4,279	33,691	14,111	266,668
Other stands	68,059	879	15,282	8,090	92,310
All stands	621,294	15,865	180,878	73,368	891,405

Table 21.--Net annual growth of growing stock by stand-size class and species group, 1952

(In thousand cords)

Stand-size class	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Sawtimber stands	839	24	489	215	1,567
Poletimber stands	942	16	232	167	1,357
Other stands	326	5	68	49	448
All stands	2,107	45	789	431	3,372

Table 22.--Average growth of sawtimber per acre by forest type and stand-size class, 1952

(In board feet)

Forest type	Stand-size class			All stands
	Sawtimber	Poletimber	Other stands	
Longleaf pine	303	94	19	99
Loblolly pine	394	231	53	266
Shortleaf pine	331	131	--	180
Pond pine	303	171	41	129
Cypress	136	189	98	140
Oak-pine	351	166	72	151
Oak-hickory	214	111	54	103
Lowland hdwds.	321	143	70	192
Scrub oak	--	--	24	24
All types	342	163	51	174

Table 23.--Average growth of growing stock per acre by forest type and stand-size class, 1952

(In standard cords)

Forest type	Stand-size class			All stands
	Sawtimber	Poletimber	Other stands	
Longleaf pine	0.6	0.5	0.1	0.4
Loblolly pine	1.0	1.1	0.3	0.9
Shortleaf pine	1.1	0.8	0.7	0.9
Pond pine	0.8	0.7	0.2	0.4
Cypress	0.7	0.4	0.4	0.6
Oak-pine	1.1	0.7	0.3	0.5
Oak-hickory	0.8	0.5	0.2	0.4
Lowland hdwds.	1.0	0.9	0.3	0.7
Scrub oak	--	--	0.1	0.1
All types	1.0	0.8	0.2	0.6

Table 24.--Annual net growth percentages[1] for sawtimber volumes by stand-size class and species group, 1952

Stand-size class	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Sawtimber stands	7.04	2.42	4.68	4.14	5.72
Poletimber stands	17.55	4.59	7.62	4.90	13.03
Other stands	8.76	3.60	7.40	5.88	8.06
All stands	9.12	2.83	5.22	4.42	7.13

[1] For use with board-foot volumes.

Table 25.--Annual net growth percentages[1] for growing stock volumes by stand-size class and species group, 1952

Stand-size class	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Sawtimber stands	5.68	2.22	4.67	4.96	5.12
Poletimber stands	11.48	4.78	7.76	7.71	9.91
Other stands	10.29	5.49	5.68	7.46	8.76
All stands	8.06	2.99	5.39	6.03	6.82

[1] For use with volumes in cubic feet or standard cords.

Table 26.--Average annual drain on sawtimber by tree-size class and species group

(In thousand board feet)

Tree-size class	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Small sawtimber	261,043	3,281	5,479	6,851	276,654
Large sawtimber	197,371	3,463	77,535	7,911	286,280
All trees	458,414	6,744	83,014	14,762	562,934

Table 27.--Average annual drain on growing stock by tree-size class and species group

(In thousand cords)

Tree-size class	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Pole trees	158	1	17	23	199
Small sawtimber	729	8	14	19	770
Large sawtimber	441	7	174	18	640
All trees	1,328	16	205	60	1,609

Table 28.--Net change in sawtimber volume by species group, 1952

(In thousand board feet)

Item	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Net volume, Jan. 1, 1952	6,810,349	559,913	3,467,339	1,661,419	12,499,020
Total growth	651,471	20,232	188,229	79,362	939,294
Mortality	30,177	4,367	7,351	5,994	47,889
Net growth	621,294	15,865	180,878	73,368	891,405
Drain	458,414	6,744	83,014	14,762	562,934
Loss or gain	+162,880	+9,121	+97,864	+58,606	+328,471
Net volume, Jan. 1, 1953	6,973,229	569,034	3,565,203	1,720,025	12,827,491
Percent change	+ 2.39	+ 1.63	+ 2.82	+ 3.53	+ 2.63

Table 29.--Net change in growing stock by species group, 1952

(In thousand cords)

Item	Softwoods		Soft-textured hardwoods	Hard-textured hardwoods	All species
	Pine	Other			
Growing stock, Jan. 1, 1952	26,137	1,506	14,650	7,153	49,446
Total growth	2,224	55	827	447	3,553
Mortality	117	10	38	16	181
Net growth	2,107	45	789	431	3,372
Drain	1,328	16	205	60	1,609
Loss or gain	+779	+29	+584	+371	+1,763
Growing stock, Jan. 1, 1953	26,916	1,535	15,234	7,524	51,209
Percent change	+2.98	+1.93	+3.99	+5.19	+3.57

Table 30.--County area by broad use class, 1952

County	Total area[1]	Nonforest area		Forest land		
		Land	Water	Non-commercial	Commercial	
	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Bladen	570.3	138.3	10.5	4.7	416.8	74.5
Brunswick	580.5	93.2	27.4	29.6	430.3	77.8
Columbus	610.6	167.8	10.2	2.3	430.3	71.7
Cumberland	423.7	157.8	1.9	2.3	261.7	62.0
Duplin	526.7	194.1	0.6	2.5	329.5	62.6
Greene	172.2	89.2	0.2	--	82.8	48.1
Harnett	388.5	164.4	2.2	--	221.9	57.4
Hoke	265.6	102.1	0.9	2.2	160.4	60.6
Johnston	508.8	252.3	2.5	2.5	251.5	49.7
Jones	299.5	63.8	1.3	12.0	222.4	74.6
Lee	163.8	41.3	0.8	--	121.7	74.7
Lenoir	250.2	121.5	2.0	--	126.7	51.0
Moore	430.7	105.5	1.5	--	323.7	75.4
New Hanover	144.0	45.9	21.8	1.2	75.1	61.5
Onslow	515.8	107.5	35.9	7.6	364.8	76.0
Pender	556.2	85.9	11.5	24.0	434.8	79.8
Richmond	309.1	104.4	5.1	--	199.6	65.7
Robeson	606.7	313.8	5.3	--	287.6	47.8
Sampson	616.3	234.6	0.2	--	381.5	61.9
Scotland	202.9	97.8	0.2	--	104.9	51.8
Wayne	355.2	193.6	0.7	--	160.9	45.4
Unit total	8,497.3	2,874.8	142.7	90.9	5,388.9	64.5

1/ Gross area from Bureau of the Census, 1950.

Table 31.--Ownership of commercial forest land by county, 1952

County	Private		Public					
			National forest	Other federal	State	County, city, town	Total public	
	Thousand acres	Percent	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Thousand acres	Percent
Bladen	385.0	92.4	--	2.7	29.1	--	31.8	7.6
Brunswick	416.8	96.9	--	13.2	0.3	--	13.5	3.1
Columbus	427.6	99.4	--	--	2.7	(1/)	2.7	0.6
Cumberland	232.4	88.8	--	29.0	(1/)	0.3	29.3	11.2
Duplin	321.5	97.6	--	--	8.0	--	8.0	2.4
Greene	82.7	99.9	--	--	-	0.1	0.1	0.1
Harnett	221.9	100.0	--	--	--	--	--	--
Hoke	79.1	49.3	--	79.8	1.5	--	81.3	50.7
Johnston	251.0	99.8	--	--	0.3	0.2	0.5	0.2
Jones	171.1	76.9	25.0	0.3	26.0	--	51.3	23.1
Lee	121.7	100.0	--	--	--	(1/)	(1/)	--
Lenoir	125.7	99.2	--	--	0.4	0.6	1.0	0.8
Moore	322.4	99.6	--	--	1.3	(1/)	1.3	0.4
New Hanover	74.1	98.7	--	--	0.7	0.3	1.0	1.3
Onslow	247.5	67.8	--	71.0	46.0	0.3	117.3	32.2
Pender	384.0	88.3	--	--	50.8	--	50.8	11.7
Richmond	163.3	81.8	--	0.8	35.4	0.1	36.3	18.2
Robeson	287.4	99.9	--	--	0.1	0.1	0.2	0.1
Sampson	381.4	100.0	--	--	0.1	(1/)	0.1	(2/)
Scotland	77.4	73.8	--	4.3	21.2	2.0	27.5	26.2
Wayne	159.7	99.3	--	0.6	0.6	(1/)	1.2	0.7
Unit total	4,933.7	91.6	25.0	201.7	224.5	4.0	455.2	8.4

1/ Less than 50 acres.

2/ Less than 0.05 percent.

Table 32.--Net volume[1] of sawtimber by county and species group, 1952

(In million board feet)

County	Softwoods[2]	Gum, maple, and yellow-poplar[3]	Other hardwoods	All species
Bladen	556.6	267.1	116.7	940.4
Brunswick	503.4	164.3	107.3	775.0
Columbus	556.7	343.9	176.4	1,077.0
Cumberland	275.8	54.9	38.1	368.8
Duplin	511.1	219.8	115.4	846.3
Greene	288.7	106.1	29.9	424.7
Harnett	213.1	140.2	107.1	460.4
Hoke	240.5	107.9	8.2	356.6
Johnston	536.1	284.4	159.8	980.3
Jones	424.2	242.4	113.1	779.7
Lee	95.0	33.7	61.0	189.7
Lenoir	210.2	88.0	51.3	349.5
Moore	273.6	147.8	200.1	621.5
New Hanover	80.8	9.9	2.1	92.8
Onslow	562.3	157.5	30.2	750.0
Pender	491.1	234.7	95.6	821.4
Richmond	177.7	114.5	36.9	329.1
Robeson	389.7	393.7	78.1	861.5
Sampson	423.2	230.8	79.6	733.6
Scotland	156.5	57.7	10.0	224.2
Wayne	403.9	68.1	44.5	516.5
Unit total	7,370.2	3,467.4	1,661.4	12,499.0

[1] Log scale, International 1/4-inch rule.

[2] Includes pine, cypress, and cedar.

[3] Includes other soft-textured hardwoods.

Table 33.--Net volume[1] of sawtimber by county, broad species group, and diameter-class group, 1952

County	Softwoods		Hardwoods		Softwoods	Hardwoods
	9-14 inches	15+ inches	11-14 inches	15+ inches		
	Million bd. ft.	Million bd. ft.	Million bd. ft.	Million bd. ft.	Percent	Percent
Bladen	355.3	201.3	194.6	189.2	59.2	40.8
Brunswick	364.2	139.2	119.0	152.6	65.0	35.0
Columbus	381.7	175.0	211.6	308.7	51.7	48.3
Cumberland	225.4	50.4	53.4	39.6	74.8	25.2
Duplin	320.0	191.1	138.1	197.1	60.4	39.6
Greene	135.1	153.6	37.1	98.9	68.0	32.0
Harnett	141.7	71.4	119.3	128.0	46.3	53.7
Hoke	151.0	89.5	43.0	73.1	67.4	32.6
Johnston	299.8	236.3	163.7	280.5	54.7	45.3
Jones	277.3	146.9	113.9	241.6	54.4	45.6
Lee	81.0	14.0	50.6	44.1	50.1	49.9
Lenoir	126.9	83.3	46.2	93.1	60.1	39.9
Moore	198.7	74.9	184.4	163.5	44.0	56.0
New Hanover	51.5	29.3	6.0	6.0	87.1	12.9
Onslow	414.4	147.9	75.7	112.0	75.0	25.0
Pender	372.5	118.6	124.9	205.4	59.8	40.2
Richmond	168.7	9.0	64.8	86.6	54.0	46.0
Robeson	246.7	143.0	215.1	256.7	45.2	54.8
Sampson	292.1	131.1	141.7	168.7	57.7	42.3
Scotland	92.8	63.7	29.7	38.0	69.8	30.2
Wayne	263.4	140.5	48.5	64.1	78.2	21.8
Unit total	4,960.2	2,410.0	2,181.3	2,947.5	59.0	41.0

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[1] Log scale, International 1/4-inch rule.

Table 34.--Net volume[1] of all timber by county, pulping species group, and tree-diameter group, 1952

(In thousand cords)

GROWING STOCK

County	Yellow pines		Other softwoods		Soft-text. hdwds.		Hard-text. hdwds.		All species
	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	
Bladen	1,320	647	40	59	737	489	256	245	3,793
Brunswick	1,303	438	94	114	343	328	136	215	2,971
Columbus	1,137	665	106	83	705	689	275	366	4,026
Cumberland	720	308	21	7	184	99	120	75	1,534
Duplin	1,226	591	11	41	575	462	258	230	3,394
Greene	413	425	26	25	103	222	115	58	1,387
Harnett	627	266	3	9	239	293	247	208	1,892
Hoke	506	303	11	28	190	219	32	13	1,302
Johnston	1,035	761	--	--	418	600	317	322	3,453
Jones	814	466	19	90	300	493	188	226	2,596
Lee	594	61	1	--	124	68	206	102	1,156
Lenoir	420	258	15	25	164	183	141	107	1,313
Moore	1,132	211	37	46	678	256	683	336	3,379
New Hanover	218	57	32	37	55	17	12	5	433
Onslow	1,239	689	14	33	355	322	95	60	2,807
Pender	1,434	394	113	84	459	469	315	190	3,458
Richmond	875	95	3	--	293	240	123	74	1,703
Robeson	714	473	89	73	911	807	90	165	3,322
Sampson	1,145	456	37	32	577	427	195	162	3,031
Scotland	312	217	19	20	130	114	14	21	847
Wayne	578	594	9	--	189	124	64	91	1,649
Unit total	17,762	8,375	700	806	7,729	6,921	3,882	3,271	49,446

OTHER MATERIAL

County	Yellow pines		Other softwoods		Soft-text. hdwds.		Hard-text. hdwds.		All species
	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	5 - 12 inches	13 + inches	
Bladen	56	18	2	13	247	285	108	95	824
Brunswick	58	23	1	28	174	161	133	110	688
Columbus	55	16	1	9	288	365	80	186	1,000
Cumberland	29	15	3	2	65	43	63	30	250
Duplin	37	13	--	--	101	201	155	92	599
Greene	9	5	2	--	35	53	26	18	148
Harnett	8	10	--	--	52	87	168	78	403
Hoke	5	10	--	7	58	58	34	8	180
Johnston	41	--	--	--	171	273	149	128	762
Jones	43	8	--	3	69	170	64	53	410
Lee	6	4	--	--	16	32	31	61	150
Lenoir	6	3	--	2	21	65	63	41	201
Moore	49	5	--	--	109	90	141	107	501
New Hanover	8	3	--	3	16	11	15	2	58
Onslow	72	12	--	--	133	158	67	30	472
Pender	72	13	9	16	241	175	139	100	765
Richmond	17	--	--	--	76	91	89	34	307
Robeson	17	--	8	5	251	352	78	61	772
Sampson	31	13	4	--	133	156	206	65	608
Scotland	3	--	--	--	39	30	34	5	111
Wayne	5	23	--	--	46	75	44	43	236
Unit total	627	194	30	88	2,341	2,931	1,887	1,347	9,445

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[1] Sound wood and bark.

Table 35.--Average annual sawtimber drain by county and species group[1]

(In thousand board feet)

County	Pine	Other softwoods	Soft-textured hardwoods	Hard-textured hardwoods	All species
Bladen	34,055	--	19,711	2,821	56,587
Brunswick	10,708	--	--	--	10,708
Columbus	44,499	1,796	27,614	1,317	75.226
Cumberland	27,435	--	414	1,598	29,447
Duplin	40,522	--	7,572	--	48,094
Greene	12,650	1,505	--	--	14,155
Harnett	16,426	--	222	1,441	18,089
Hoke	10,160	305	831	--	11,296
Johnston	41,559	--	672	1,226	43,457
Jones	5,714	--	--	--	5,714
Lee	10,700	--	--	1,034	11,734
Lenoir	11,424	--	1,278	--	12,702
Moore	16,565	--	--	1,725	18,290
New Hanover	11,331	2,022	--	--	13,353
Onslow	27,366	--	5,786	1,467	34,619
Pender	26,187	373	3,472	--	30,032
Richmond	24,847	147	2,503	332	27,829
Robeson	44,504	596	9,887	470	55,457
Sampson	27,943	--	2,000	1,331	31,274
Scotland	4,808	--	--	--	4,808
Wayne	9,011	--	1,052	--	10,063
Unit total	458,414	6,744	83,014	14,762	562,934

[1] Estimates of timber drain by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

Table 36.--Average annual drain on growing stock by county and species group[1]

(In thousand cords)

County	Pine	Other softwoods	Soft-textured hardwoods	Hard-textured hardwoods	All species
Bladen	117	--	45	8	170
Brunswick	37	--	--	--	37
Columbus	123	4	62	12	201
Cumberland	73	--	4	6	83
Duplin	112	--	18	1	131
Greene	27	3	--	--	30
Harnett	49	--	1	4	54
Hoke	28	1	3	--	32
Johnston	121	--	4	3	128
Jones	18	--	--	--	18
Lee	29	--	--	3	32
Lenoir	25	--	3	--	28
Moore	59	--	--	5	64
New Hanover	33	4	--	--	37
Onslow	81	--	13	9	103
Pender	76	2	8	--	86
Richmond	70	1	6	1	78
Robeson	115	1	29	3	148
Sampson	92	--	7	5	104
Scotland	14	--	--	--	14
Wayne	29	--	2	--	31
Unit total	1,328	16	205	60	1,609

[1] Estimates of timber drain by county are less accurate than inventory volumes, and use of individual county statistics should be avoided. For general use, data for a minimum of 10 counties should be combined.

DEFINITION OF TERMS

Land-Use Classes

Forest land: Includes (a) lands which are at least 10 percent stocked with trees of any size and capable of producing sawtimber or other wood products, and (b) lands from which the trees described in (a) have been removed to less than 10-percent stocking but which have not been developed for other use; subdivided into the following classes:

Commercial: Forest land which is (a) producing, or physically capable of producing, usable crops of wood (usually sawtimber), (b) economically available now or in the future, and (c) not withdrawn from timber use.

Noncommercial: Forest land (a) withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as commercial forest land, and (b) incapable of yielding usable wood products (usually sawtimber) because of adverse site conditions, or so physically inaccessible as to be unavailable economically in the foreseeable future.

Nonforest land: Includes land in the following classes:

Agriculture: Land under cultivation or in pasture including farmyards and work lots, and idle or abandoned farmland which has not reverted to forest.

Marsh: Low, wet areas characterized by a heavy growth of grass and reeds and an absence of timber.

Urban and other areas: Includes towns, residential and industrial suburban areas, school yards, cemeteries, roads, railroads, power lines, and other rights-of-way.

Water: Includes lakes, bays, and estuaries over 40 acres in size, and streams, canals, and sloughs at least one-eighth of a mile in width which are classed as "inland water" by the Bureau of the Census. Smaller lakes and ponds between one acre and 40 acres in size, and waterways between 120 feet and 660 feet in width, which are classed as land area by the Bureau of the Census, are also included as water areas.

Forest Types

Forest type is determined on the basis of cubic volume for all stand sizes except seedlings and saplings (stand size 4), in which case the number of stems are the criteria.

Pine types: Forests in which 50 percent or more of the stand is in pine species. Plurality of volume or number of trees is used to determine the specific type.

Oak-pine type: Forests in which 50 percent or more of the stand is hardwood, usually upland oaks, but in which southern yellow pines make up 25-49 percent of the stand.

Oak-hickory type

Upland hardwood: Forests in which 50 percent or more of the stand is composed of upland oak, hickory, yellow-poplar, maple, gum, and other hardwoods, except where pines comprise 25-49 percent of the stand.

Scrub oak: Upland forests in which 50 percent or more of the stand is composed of scrub oak species, except where pines comprise 25-49 percent of the stand.

Oak-gum-cypress type

Lowland hardwood: Bottomland forests in which 50 percent or more of the stand is tupelo, blackgum, sweetgum, ash, oak, elm, maple, and associated species, except where pines comprise 25-49 percent of the stand.

Cypress: Bottomland forests in which 50 percent or more of the stand is cypress, except where pines comprise 25-49 percent of the stand.

Stand-Size Classes

Sawtimber: Stands containing at least 1,500 board feet net volume per acre, 1/4-inch log rule, in sound, live, softwood trees 9.0 inches d.b.h. or larger, or hardwood trees 11.0 inches d.b.h. or larger. Two classes of sawtimber stands are recognized:

Large sawtimber: Stands of sawtimber having more than 50 percent of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Small sawtimber: Stands of sawtimber having 50 percent or less of the net board-foot volume in trees 15.0 inches d.b.h. or larger.

Poletimber: Stands failing to meet the minimum sawtimber specifications, but at least 10-percent stocked with trees 5.0 inches d.b.h. or larger and with at least half the minimum stocking in pole-size trees.

Seedling and saplings: Stands not qualifying as sawtimber or poletimber stands, but having at least a 10-percent stocking of trees of commercial species and with half the minimum stocking in seedlings and saplings.

Nonstocked and other areas: Forest areas not qualifying as sawtimber, poletimber, or seedling and sapling stands.

Diameters

D.b.h. (diameter at breast height): Stem diameter in inches, outside bark, measured at 4-1/2 feet above the ground.

Diameter class: All trees were tallied by 2-inch diameter classes, each class including diameters 1.0 inch below and 0.9 inch above the stated midpoint, e.g., trees 7.0 to and including 8.9 inches are included in the 8-inch class. Corresponding limits apply to other diameter classes.

Timber Quality Classification

Growing Stock

Sawtimber trees: Live softwood trees at least 9.0 inches d.b.h. and hardwood trees at least 11.0 inches d.b.h., with not less than one merchantable log 12 feet long, or with less than 50 percent of the gross volume of the tree in sound sawtimber.

Poletimber trees: Straight-boled trees between 5.0 inches d.b.h. and sawtimber size.

Sapling-size trees: Trees 1.0 inch to 4.9 inches d.b.h. which will grow into poletimber or sawtimber size trees of sound quality.

Other Material

Sound cull trees: Live trees of all sizes that are unmerchantable for sawlogs now or prospectively because of species, poor form, excessive limbiness, or other sound defect.

Rotten cull trees: Live trees of all sizes that are unmerchantable for sawlogs now or prospectively because of rotten defect.

Hardwood limbs: The limb volume of all hardwood sawtimber and cull trees to a minimum diameter of 4.0 inches inside bark.

Species Groups

Yellow pines: Includes longleaf, slash, loblolly, pond, and shortleaf pine.

Other softwoods: Pondcypress, baldcypress, eastern redcedar, and Atlantic whitecedar.

Soft-textured hardwoods: Black and tupelo gum, yellow-poplar, sweetgum, cottonwood, soft maple, basswood, magnolia, sweetbay, and willow.

Hard-textured hardwoods: All of the oaks, hickories, ash, beech, elm, river birch, hackberry, sycamore, black locust, mulberry, black walnut, holly, dogwood, and persimmon.

Volume Estimates

Board-foot volume: The volume in board feet, measured by the International 1/4-inch rule, exclusive of defect, of that portion of sound sawtimber trees between the stump and the upper limit of merchantability for sawlogs.

Volume in cords: For sound trees the volume in standard cords (including bark) of the sound portion of trees 5.0 inches d.b.h. and larger, between stump and a minimum top-stem diameter of 4.0 inches inside bark. Similar volumes are given for cull trees. The volume in limbs, in sections four feet long and at least 4.0 inches in diameter inside bark, of all sawtimber size hardwoods is shown separately.

Volume in cubic feet: Same as volume shown in cords except bark is not included.

International 1/4-inch log rule: A rule for estimating the board-foot volume of 4-foot log sections, according to the formula $V = .905 (0.22D^2 - 0.71D)$. The taper allowance for computing the volume in log lengths greater than four feet is 0.5 inch per 4-foot section. Allowance for saw kerf is 1/4 inch.

Standard cord: A stacked pile, 4 x 4 x 8 feet, of round or split bolts, estimated to contain, on the average, about 73 cubic feet of solid wood.

Stocking

Stocking is the extent to which growing space is effectively utilized by trees. The number of stems present by d.b.h. classes was used as a basis for stocking classification. Areas having the minimum numbers of trees listed below, either in a single diameter class or proportionately in any combination of diameter classes, were considered fully stocked.

D.b.h.	Minimum number trees per acre
Seedlings	1,000
2 inches	800
4 inches	590
6 inches	400
8 inches	240
10 inches	155
12 inches	115
14 inches	90

Growth and Drain

Net growth.--The estimated volume of net growth includes growth on the present growing stock plus the ingrowth accrual resulting from smaller trees reaching volume size. It excludes mortality, or loss of volume in trees dying from natural causes. Growth estimates are based on the volume or number of sound trees. Other material is not included.

In board feet: The change during the calendar year in sawtimber volume resulting from growth, ingrowth, and mortality losses.

In cubic feet or cords: The change during the calendar year in the volume of all sound trees 5.0 inches d.b.h. and larger resulting from growth, ingrowth, and mortality losses.

Timber drain.--The volume of timber drain is based on the measurement and tally of stumps found on regular ground sample plots. Stumps of all trees cut during the past three-year period were recorded and the measurements converted into equivalent tree volume. The average volume of drain for the three-year period was then taken as the annual estimate. Board-foot drain volumes include the sawlog portion of all sawtimber-size trees which were cut. Drain in cubic feet or cords includes the entire stem from stump to 4.0-inch top of all sound trees 5.0 inches in diameter and larger.

RELIABILITY OF FOREST SURVEY DATA

In general, the errors which affect the accuracy of Forest Survey area and timber volume estimates arise from two sources. These may be described as (1) sampling errors which result from using sampling procedures rather than making a complete inventory or canvass, and (2) non-sampling errors which arise from human mistakes in judgment, measurement, recording, or arithmetic.

In Forest Survey work a diligent effort is made to maintain a high degree of accuracy in the collection and compilation of data. The sampling errors are held to a specified minimum through survey design and sampling technique. These errors are the only measurable errors involved in computing the reliability of the data. The non-sampling errors are minimized or eliminated through training, supervision, field check cruises, and complete editing and machine verification in compiling the data.

Forest area.--The sampling intensity of the 1952 survey was sufficient to provide an estimate of the total forest acreage in the Unit with a standard error of ±0.9 percent. The probabilities are two out of three that the estimated forest acreage is within ±0.9 percent of the actual acreage.

Cubic volume.--The standard error of the 1952 net cubic-foot volume in the Unit was ±2.2 percent. Here again, the probabilities are two out of three that the estimated volume does not vary from the actual volume by more than this percentage. The standard error of the volume in cords was not computed but it should be approximately the same.

Board-foot volume.--The standard error of the 1952 estimate of board-foot volume in the Unit was ±2.6 percent.

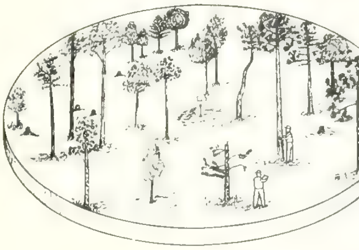
Use of county data.--The tables showing area and timber volumes by county are included to permit grouping of the data in any desired combinations. The survey was designed so that the number of sample plots taken in each county would provide an estimate of the timber volume in cubic feet which would not exceed ±15 percent. The actual range of error of the cubic volume estimates by county is from ±7.4 percent to ±12.2 percent. The errors of board-foot volume estimates by county range from ±8.6 percent to ±12.3 percent, and of forest area from ±1.6 percent to ±9.2 percent.

In spite of the accuracy limit set on volume estimates by county, comparison of individual county statistics may be subject to considerable error and should be avoided. Grouping the data for a number of counties will increase the reliability and make the combined estimates sufficiently accurate for general use. For example, grouping the timber volume data for four counties with errors ranging from 7 to 12 percent resulted in a total volume estimate with only ±5 percent error.

HOW THE FOREST INVENTORY IS MADE

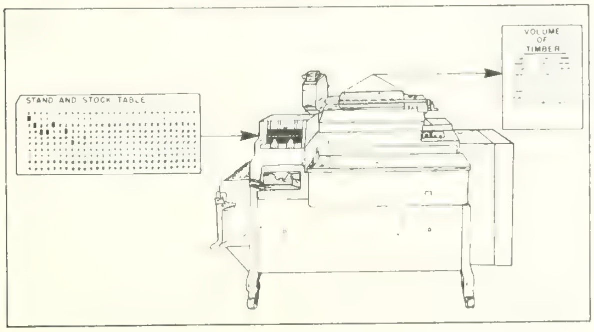
The present system of inventory is a two-step method which includes land-use classification of points on aerial photographs followed by the cruising of ground sample plots. The county is the basic work unit. The detailed procedure is as follows:

1. Preliminary estimates of the acreage of land in forests and other land-use classes are obtained by classifying points printed on every third aerial photograph in alternate flight lines within a county. The proportion of points falling in each class is used to estimate the acreage. This estimate is later checked and revised through the use of ground plots.



2. Ground sample plots are selected in a systematic manner from the forest land classifications made in Step 1, using an interval which will provide sufficient plots to meet established limits of error per billion cubic feet of timber. This results in a proportional sample of all existing timber stands. Timber cruisers make a detailed description and tally of the ground plots to obtain data on timber volume, quality, stocking, and mortality. Samples of agricultural and other photo classifications are also checked on the ground to verify or adjust the area estimates based on these classifications.

3. Growth estimates are based on increment borings taken proportionally from sample trees of various diameters and species in each forest type and stand class. The volume of timber drain is computed from a tally of the stumps of trees cut on the plots during a specified period.



4. All field data are sent to Asheville for editing and are placed on punch cards for machine sorting and tabulation. Final estimates are based on statistical summaries of the data.

FOREST SURVEY REPORTS PUBLISHED SINCE 1945

Southeastern Forest Experiment Station

No. 21 - 1945 Pulpwood Production by County in the Carolinas and Virginia

No. 22 - Southern Forests as a Source of Pulpwood

No. 23 - 1946 Pulpwood Production by County in the Southeast

No. 24 - Southern Pulpwood Production and the Timber Supply

No. 25 - Forest Resources of the Lower Coastal Plain of South Carolina

No. 26 - 1946 Commodity Drain by County from South Carolina Forests

No. 27 - 1947 Pulpwood Production by County in the Southeast

No. 28 - South Carolina's Forest Resources, 1947

No. 29 - 1948 Pulpwood Production by County in the Southeast

No. 30 - Forest Resources of Northeast Florida, 1949

No. 31 - Forest Resources of Central Florida, 1949

No. 32 - Forest Resources of Northwest Florida, 1949

No. 33 - Forest Resources of South Florida, 1949

No. 34 - Timber Production and Commodity Drain from Florida's Forests, 1948

No. 35 - 1949 Pulpwood Production in the South (Out of print)

No. 36 - Forest Statistics for Florida, 1949

No. 37 - Forest Statistics for Southwest Georgia, 1951

No. 38 - 1951 Pulpwood Production in the South

No. 39 - Forest Statistics for Southeast Georgia, 1952

No. 40 - Forest Statistics for Central Georgia, 1952

OTHER REPORTS

1950 Pulpwood Production in the South. Forest Survey Release No. 69

1952 Pulpwood Production in the South. Forest Survey Release No. 72

Virginia Forest Resources and Industries, 1949. U. S. Dept. Agr. Misc. Pub. No. 681

The Timber Supply Outlook in South Carolina, 1951. U. S. Dept. Agr. Resource Report No. 3

The Timber Supply Situation in Florida, 1952. U. S. Dept. Agr. Resource Report No. 6

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